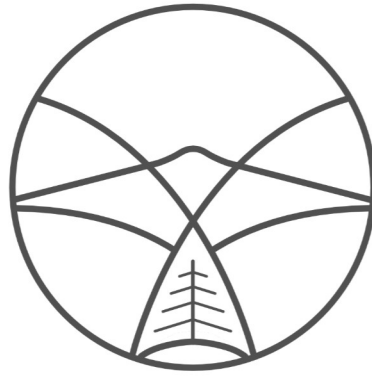




BRYN CYNEFIN
PERMACULTURE FARM

One Planet Development Management Plan 2025-30

Bryn Cynefin, Pandy, Monmouthshire, NP7 8EB

Aug 2025



Cynefin. [Kuh-nev-inn] noun

Directly translated into English as “*habitat*”, “*cynefin*” is a Welsh word that connects us to our sense of belonging.

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1. Introduction and Summary

- 1.1.1 This Management Plan (MP) supports the application by Lily and Pete Sequoia for a One Planet Development (OPD) at Bryn Cynefin under the TAN6 One Planet Development Policy. It has been produced with the assistance of Geo, planning, sustainability and agricultural consultants who provided an independent appraisal of the proposals. JMS consulting engineers who designed the SUDs system, Waxwing Energy who provided an energy assessment of the dwelling., TDA landscape consultants who carried out a Landscape and Visual Impact Assessment and Abbey Saunders Ecology who carried out the PEA survey and advised on ecological issues.
- 1.1.2 We have thoroughly researched our design, land management and business plan and feel confident we can fulfil the requirements of the One Planet Development policy allowing us to fulfil our dream of starting a small regenerative farm in Wales.
- 1.1.3 This document should be read in conjunction with all the appendices and the full drawing set.

About us



- 1.1.4 We are a family of four with a long-standing commitment to low-impact living. We have lived off-grid since 2011 in a variety of cabins, caravans, and community land projects, and are very accustomed to off-grid living. Since moving to Monmouthshire in 2017 we have

integrated into the local community, organising and participating in events, projects, and community groups.

- 1.1.5 We own all of the land at Bryn Cynefin described in this MP. We bought the land in 2022. We currently live onsite in temporary living accommodation under the provisions of the Caravan Act (an off-grid cabin), whilst we carry out works to establish access and horticultural infrastructure alongside agricultural building and engineering works, which we have permission for under previously agreed full planning and permitted development applications. In the future we intend for the off-grid cabin to become ancillary guest accommodation as part of the OPD. Pete

Pete

- 1.1.6 An ecological design consultant, builder, and carpenter with a background in architecture, communication, and sustainable design (MA Sustainable Design, Permaculture Design Certificate 2011). He has lectured at the University of Brighton, taught Permaculture Design, and contributed to community woodland and wellbeing projects, focusing on men's work and mental health. His practical work includes the design and build orchard processing facilities, creation of an off-grid forest school, fit out of the Angel Bakery shop in Abergavenny, and design and construction of a low-energy garden studio and other OPD projects. Skilled in off-grid systems and ecological building, Pete is now based full-time at Bryn Cynefin.

Lily

- 1.1.7 With a background in physical therapy and perinatal wellbeing and community project coordination. Lily has coordinated large-scale land skills and crafts programmes she has 11 years' experience researching, volunteering and working in permaculture and market gardens and three years of herbal medicine studies. Lily is now reducing her work as a Soft Tissue Therapist to focus on developing horticulture, product development and communications for Bryn Cynefin.

Children

- 1.1.8 Both children (11 and 4) attend local schools. This keeps our family rooted in the local community and ensures our children grow up connected to both the land and local networks of friends.

Family ties

- 1.1.9 Lily's sister also lives locally in Abergavenny with her young family, strengthening our family connections to the area.
- 1.1.10 Bryn Cynefin Permaculture Farm is and will be our sole residence. We are serious about our ethos of living off the land and providing a net carbon, minimal resource habitation for the rest of our lives. We will grow food for our own consumption, for sale to the local community and set-up land-based businesses to meet our basic financial needs.
- 1.1.11 We will enter into a unilateral undertaking to ensure that the proposals are tied to the land they require (the application site) on grant of planning permission. Wording of the proposed unilateral undertaking is laid out in Appendix A of this MP.

Summary of our plans

- 1.1.12 There is already an existing barn, access and infrastructure on the land as laid out in the baseline section below. We are currently building structures for which we have approval under Full Planning and Agreed Permitted Development. We are intending to build a low impact dwelling in compliance with the Caravan Act and the One Planet Development (OPD) policy and Guidance contained in TAN6 (July 2010).

- 1.1.13 We are also proposing to build a greenhouse by the house and to enhance our farm workshop to provide a woodworking space for making timber products from wood harvested from the land. We want to create a wheelchair accessible green woodworking space within a small area of poor quality copse woodland. This will consist of a walkway, two open sided shelters and a geodome which will make green woodworking more accessible for the community on open days and teaching days.

- 15.75 acres: ~11 acres semi-improved grassland, 3 acres deciduous broadleaf woodland, 1 acre mixed copse.
- Historically part of Semi Natural Ancient Woodland, converted to pasture ~70 years ago.
- Land will provide for household needs and business, while also enhancing biodiversity, creating new habitat and wildlife corridors.

Land-based enterprise

- Primary focus: horticulture and woodland management
- Products: shiitake mushrooms (380 alder logs inoculated in 2024), winter salads, heritage orchard fruit (1 acre planted), herbs, free-range eggs, fermented foods, teas, tonics and chutneys, hand-crafted wood kitchen furniture - under the umbrella Cynefin Kitchen..
- Future additions to the site: forest garden, coppice, commercial herb garden, free range poultry and sheep.

Household provision & sustainability

- Food: minimum 65% of household needs met from land-based production.
- Income: 100% of minimum financial needs (council tax, clothing, transport, communications) from land-based sales.
- Energy: produced onsite from renewable sources.
- Water: supplied by spring and rainwater harvesting.
- Waste: majority processed onsite via composting/recycling; negligible export.
- Ecological footprint: estimated 2.4 global hectares initially, reducing to ≤ 1.88 within 5 years.

Community & education

- Quarterly workshops and small ticketed community events
- Local sales and exchanges to support the rural economy
- Integration with the local community through school and local groups, contributing to community resilience.

Management approach

- Rotational grazing with sheep, orchard alley cropping systems, and biodiversity enhancements (ponds, hedgerows, woodland management).
- Infrastructure (home, polytunnel, outbuildings) designed to be low-impact and sympathetic to the landscape.
- Minimal transport impacts.
- Land-based enterprise

- Household provision & sustainability
 - Community & education
 - Minimal transport impacts.
- 1.1.14 Since 2022 we have begun managing the land to restore biodiversity. This includes the planting of trees, establishing and managing hedgerows and managing the grassland. Existing wildlife corridors will be maintained and enhanced. New corridors will be created to improve habitat connectivity and improved biodiversity, fruit, shade, habitat and nesting opportunities for indigenous wildlife.
- 1.1.15 At Bryn Cynefin we will use regenerative and sustainable practices to establish a land-based livelihood alongside a modest off-grid dwelling for our family.
- 1.1.16 Our primary focus will be horticulture and woodland management. Our Main enterprise, Cynefin Kitchen will produce woodland mushrooms, winter salads, heritage orchard fruit, fresh culinary herbs, free-range eggs, fermented foods, teas, tonics and hand-crafted wooden kitchen furniture. Our main mode of distribution will be offsite at local markets, retail outlets, restaurants and through a quarterly CSA box scheme. The land based business and land management is laid out in full in Section 7 and Appendix E the land based business plan.
- 1.1.17 The woodland will be selectively thinned and coppiced to provide timber, mushroom logs and firewood while improving species diversity and long-term resilience. We will develop a biodiverse landscape with perennial foraging food system, forest gardens and growing areas to supply vegetables, herbs and perennial crops. By-products will be processed into compost or biochar to return fertility to the soil. Livestock will graze the land on a rotational system, enhancing soil health.
- 1.1.18 Infrastructure has been designed to minimise external inputs and environmental impact. Energy will be provided through solar power, water will be captured and stored onsite from existing water sources and rainwater harvesting, using swales and ponds to manage surface water. Buildings will be constructed from locally sourced, sustainable and reclaimed materials, and designed to be sympathetic to the local environment.
- 1.1.19 The proposals have been developed with input from ecologists, planning advisors and landscape architects to ensure they simultaneously mitigate potential negative effects while delivering clear ecological gains. Biodiversity enhancement, soil health, water management and carbon reduction have been central considerations in each element of the design.
- 1.1.20 Our intention is to live and work on the land in a way that is viable, responsible and regenerative. This model enables us to meet our needs, contribute positively to the local economy, serve the local community and demonstrate a low-impact lifestyle, in accordance with the One Planet guidelines.
- 1.1.21 We are doing this because we are committed to living in a way that considers the world we want to create for future generations. Much of what we develop here won't benefit us in our lifetime! Nonetheless, living in a low-impact lifestyle allows us to live in a way that is connected to natural cycles and living systems and feels aligned with our ethics, integrating our business. Bryn Cynefin will enable us to reduce our reliance on fossil fuels and external supply chains, cut waste, and keep our carbon footprint small. By producing food, fuel and materials directly from the site, we can meet our needs in a way that strengthens biodiversity, supports the local economy, integrates us with our local community, having positive impact now and into the future.

2. Baseline Information

- 2.1.1 This section on the 'baseline' will enable us to measure improvements made to the land in all aspects of sustainability and ecology. The baseline is based on the land as purchased, prior to any OPD related activities having taken place.

2.2. Location

- 2.2.1 The site is located at Bryn Cynefin, Pandy, Monmouthshire, NP7 8EB. The site is approximately 2 miles NE of Pandy, 7 miles NE of Abergavenny and 15 miles SW of Hereford. There is a good existing site entrance onto the A465 is located at grid reference: Easting: 335075 Northing: 223683, approximate National Grid Reference SO 35041 23556 The location is indicated on the aerial image in Figure 1 below, shown within the blue line area.

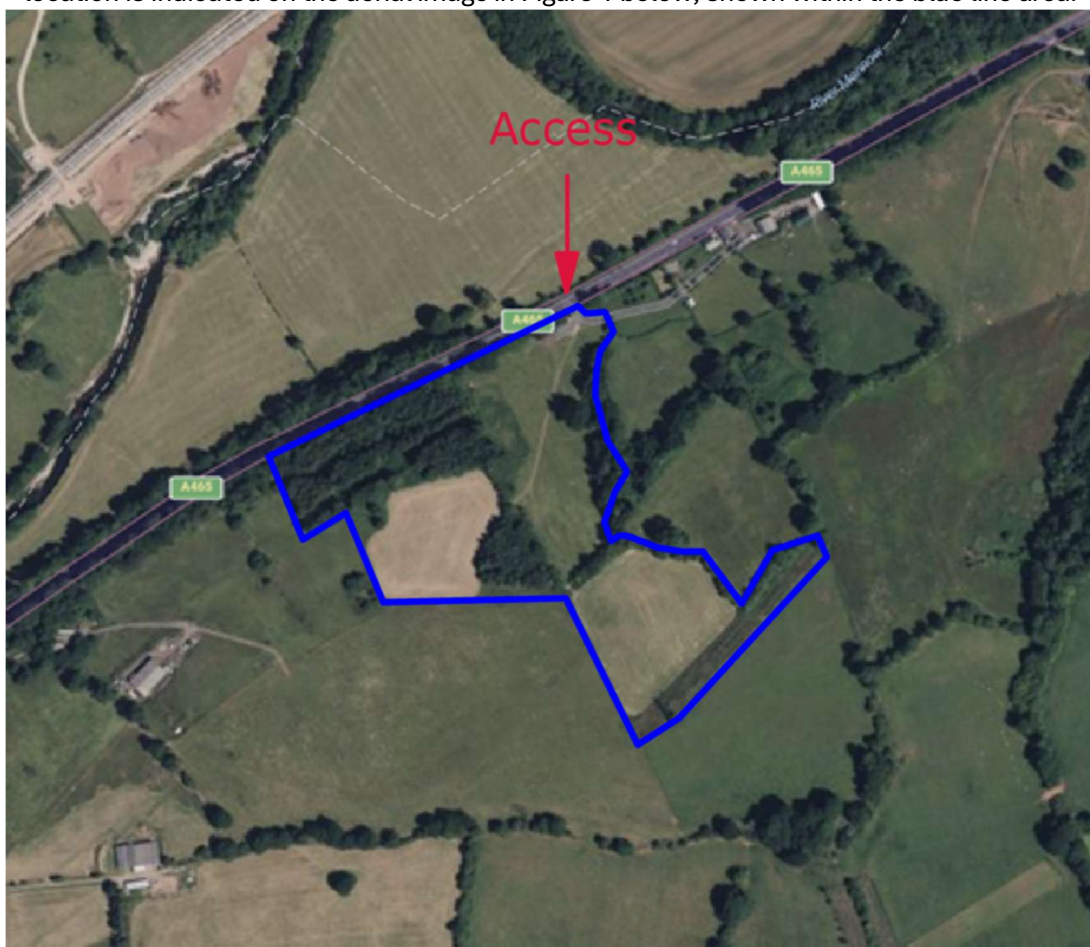


Figure 1 land location and access © openstreetmap

- 2.2.2 The more general location of the land is shown on the aerial photograph in Figure 2 below showing the site in the wider context of the locality.
- 2.2.3 The land is connected to the surrounding settlements by trunk road the A465 and the 23 Hereford to Abergavenny stagecoach bus, running every 2 hours between 7am and 6pm. The bus stops are 50m and 100m to the east of our gate. Abergavenny train station can be accessed from the A465, and is 8.4 miles car/cycle or bus journey in a westerly direction along the A465. There are no footpaths or rights of way onsite or along the boundary. Detail of the transport links to surrounding settlements are laid out in detail in the Transport Assessment and Travel Plan in Section 11.

- 2.2.4 The site access is shared with our neighbours who have a right of access over our land. The access is therefore already used as a residential access onto the A465.

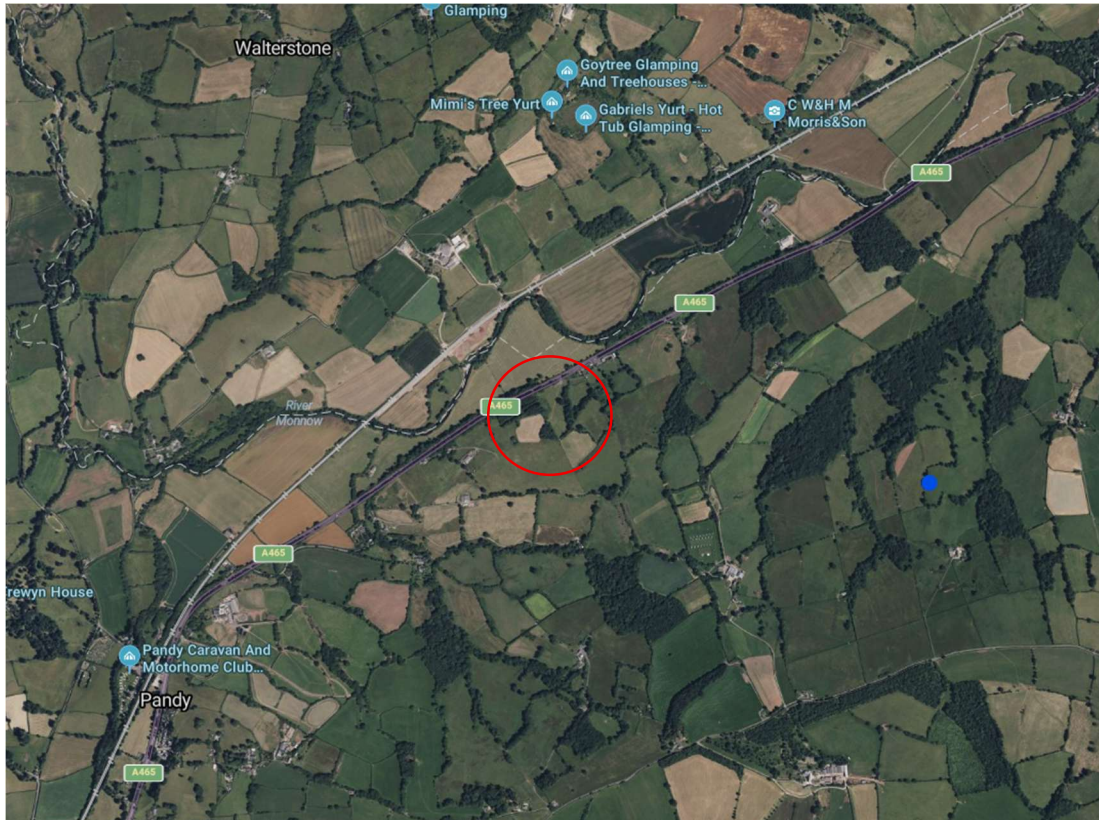


Figure 2 Wider context of site © openstreetmap

2.3. Description

- 2.3.1 The area of the land in our ownership is 6.37 ha (15.75 acres). It is a mixture of pasture fields with three areas of woodland and hedges.
- 2.3.2 When we bought it, the land was being used solely for grazing. The woodland and a strip of land 20m x 225m on the northern most boundary was part of a pheasant shoot, so has been allowed to develop high areas of brushland. It is interesting to note that the entire site was semi-ancient woodland as shown on the 1870 OS map until well into the 1950's and possibly 70's. The person who carried out our tree survey suggested it was a casualty of the mass destruction of ancient woodland in the UK post 1945. It was called Pen-Isar-Plwyf (The top of the lower parish wood). The site is near the parish boundary and woods often survived longest here because people would have to make more effort to travel to the boundary to work and transport things back; The advent of tractors and other machinery changed that.

2.4. Physical Features

- 2.4.1 There are the following existing buildings and services within the site:

Buildings

- Existing buildings
 - Steel portal barn 13.72m L x 6.10m W - planning permitted in 2007
- Full Planning for (under construction - planning ref DM/2023/00598)
 - 15m x 3.3m single story workshop extension to existing barn

- Area of hardstanding adjacent to workshop/barn
- 20ft shipping container with 6.7m x 4.5m lean-to open-side shelter
- Polytunnel
- Access track to woodland
- Permitted Development (under construction - planning ref DM/2023/00529)
 - Access track to all parcels of land
 - Timber barn - 10.3m 9 (w) x 14m (l) x 5.3m (h)
- Suds approval has been obtained for a scheme that covers all development. This comprises three detention basins for building and track run-off and 10 IBCs for rain water harvesting (see Appendix H - full suds doc).
- A small timber clad cabin (designed in compliance to the Caravan Act) is on site and being used as a temporary accommodation during construction of approved works.

Services

- Spring fed water supply - including 3000ltr storage and solar pump
- There is no mains water or sewer servicing the land
- A power line runs across the site to the north

2.4.2 The physical features of the land are as follows:

- Heavy clay soils
- The soils hold water and are hence good for ponds
- Agricultural land classification – mostly 4 and 3b where the polytunnel is
- The farm consists of approximately:
 - 4.45 ha (11 acres) of semi-improved neutral pasture
 - 1.2 ha (3 acres) of deciduous broadleaved woodland, which constitutes a mix of 70 year old trees, and includes a 1.1 ha area of ancient semi natural woodland
 - 0.40 ha of coniferous woodland
 - Tracks and hardstanding
 - 411 m of hedgerows in reasonable condition
 - 585 m of fenced field boundary being strengthened by hedge planting.

2.4.3 The topology and levels of the site as existing are shown in Figure 3. The land slopes down to the east, north and west and sits between 110-190m (AOD).

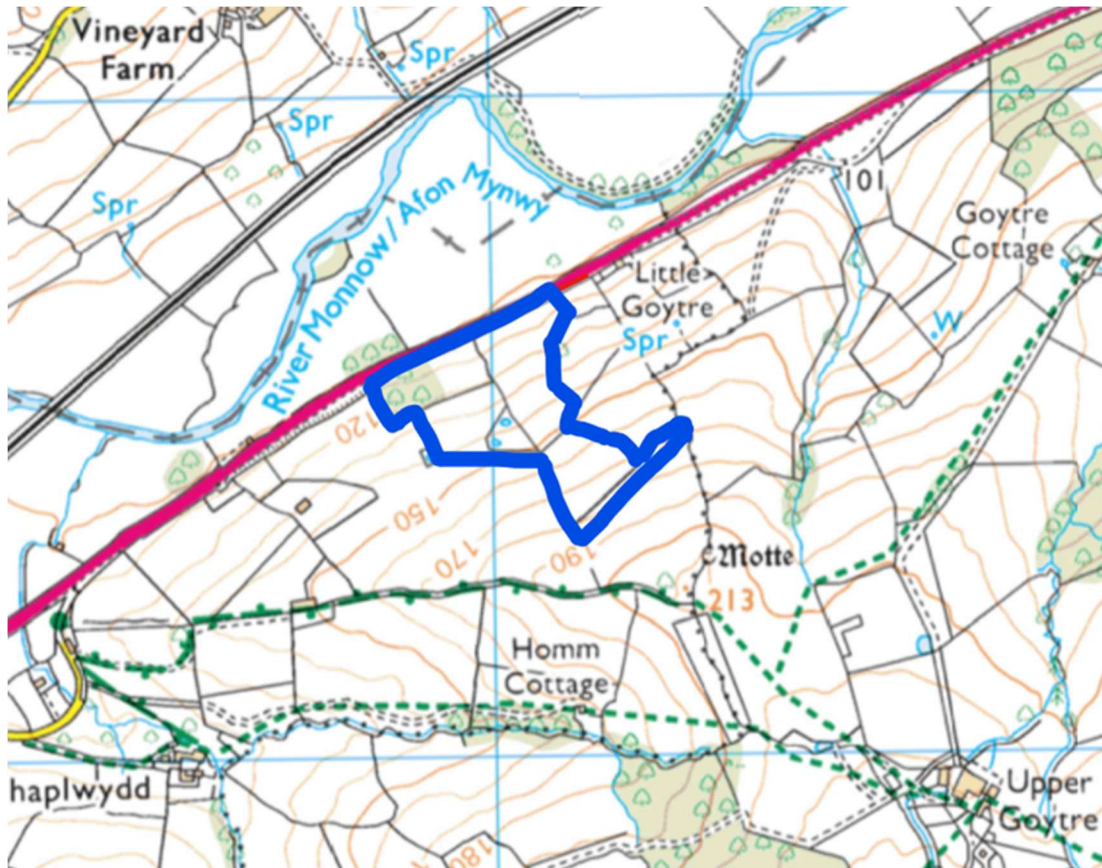


Figure 3 topology of the site and surroundings © Bing maps

- 2.4.4 The site is situated on a North Westerly facing slope on the side of a larger valley running from east to west containing the river Monnow. On average the land slopes at 13.1 degrees although from viewing more detailed contour information it is clear there are some areas throughout the site where the slope is less severe making these areas more suitable for the placement of buildings, polytunnels and ponds. This will minimise earthworks and maximise solar gain with solar PV which requires an unshaded southern aspect for optimal functioning when the sun is at its lowest of 20.1 degrees on Winter Solstice (21 Dec). In addition to the slope existing trees and hedgerows also present limitations to where certain elements can be placed due to shadowing during winter months.
- 2.4.5 Topographical and observational information from the site also reveals two seasonal streams that flow constantly throughout the winter months, one along the North-East boundary of the site and the other running through the center of the site from South-West to North-West. Both streams leave the site via a culvert adjacent to the A465 where they connect to road side drainage channels. The approved SUDs scheme utilises the latter as an outflow for any water that cannot be stored or reabsorbed by our detention basins during or after a heavy rain event.
- 2.4.6 Due to the slope of the site and its relationship to the River Monnow it is also essential to implement as many strategies as possible to manage rain water run-off from the land for both environmental reasons with regards to flood prevention and agricultural run off and for its role in the creation, maintenance and enhancement of specific habitats, allowing for its slow re-absorption back into the soil where possible.
- 2.4.7 The land is divided into three fields which we call;
- Orchard Field (to the northwest of the land.

- Lower Field to the northeast of the land.
- Upper Field to the southeast of the land.

2.4.8 Orchard Field has the following features and vegetation around its boundaries:

- The northwest boundary, along the A465 includes broadleaved woodland classified as semi natural ancient woodland.
- Good thick hedge between orchard field and lower field
- A copse of young poor-quality trees to the southeast corner
- The south and western boundary of the Orchard Field is made up of 1-2 year old mixed native hedgerow and shelter belt trees - provided by Stump up for Trees and planted between Feb 2024 and March 2025.
- In March 2025 a fruit orchard, nut trees and a block of Sweet Chestnut coppice were planted in the north of the field adjacent to the existing ancient semi natural woodland.
- Beyond the southwest corner of Orchard Field, on our neighbour's land is a pond surrounded by trees.

2.4.9 Lower Field has the following features and vegetation around its boundaries:

- The northwest boundary, along the A465 behind the barn and hardstanding is a single row of thick mixed hedge of predominantly hazel, with some hawthorn and elder, including one large oak.
- The northeast boundary consists of a small strip of woodland which extends into our neighbours land, including hazel, Birch, Oak and Ash. A livestock fence sits west of the boundary, rather than on the actual boundary line due to dense trees and sloping land.
- The southern boundary with our Upper field is a good quality hedge with some mature trees.
- The western boundary is formed of the copse to the south and the thick hedge to Orchard Field lower down to the north.

2.4.10 Upper Field has the following features and vegetation around its boundaries:

- The northern boundary hedge to Lower Field.
- The northeast boundary is marked by stock fence and sparse hedge including veteran Hawthorn trees.
- The southern boundary is a 20 x 225m strip of wet scrubland - an area that was previously used as cover for pheasant shooting and consists of ash, willow, self seeded oak, a small planting of conifers and a variety of wetland grasses.
- The western boundary is a continuation of 1-2 year old mixed native hedgerow and shelterbelt trees - provided by Stump up for Trees and planted in Feb 2024. In March 2025 further blocks of Aspen and Sweet Chestnut Coppice were planted for future fuel and construction use.

2.4.11 The land is surrounded by fields of pasture with a finger of scrub land extending from our land out into the wider landscape.

2.4.12 The A465 to the northern boundary acts as a boundary to the movement of wildlife.

2.5. Baseline Ecological Information

- 2.5.1 Since purchasing the land in December 2022 a number of surveys have been carried out to obtain further information about the habitats present. Most recently prior to this application the site was surveyed by Abby Saunders Ecology, Chepstow which also included a survey of bat activity in 3 areas under consideration for the placement of buildings. (see Appendix B for full PEA report). In addition Rob Davies of the Woodland Trust has provided an audit of the Ancient Semi-natural woodland that forms part of the land (outside of the OPD site) and Ecologist Stephanie Tyler MBE carried out a plant species survey of our grassland areas in 2024 (see the appendices to the PEA document).
- 2.5.2 In summary the land consists of six main habitats:
- Semi-improved neutral grassland (Lower, Upper and Orchard Field),
 - Ancient Semi Natural Woodland designated as a SINC.
 - A small recently planted copse woodland (20 years old) of lower quality
 - The copse contains two heavily silted ponds.
 - Four lengths of reasonably good hedgerow. Three lengths of recently planted hedgerow.
 - The scrub strip to the south boundary of the upper field.
- 2.5.3 Locally important wildlife sites (SINCs) within 500m of our land are:
- The land in our ownership contains 'Little Goytre Wood, a SINC locally designated wildlife site.
 - Little Goytre the farm adjoining our land to the east is a SINC containing species rich neutral grassland.
 - River Monnow (288m north) – a main tributary of the River Wye

2.6. Baseline Landscape Information

- 2.6.1 Bryn Cynefin sits with National Landscape Character Area (NLCA) 31 Central Monmouthshire. This is described as an area of gently rolling hills, intervening valleys and the Usk flood plain.
- 2.6.2 The land sits on the southern slopes of the Monnow valley, with extensive views of the higher land from the west across to the north east from the higher parts of the land.
- 2.6.3 The land is typical of the area, described in the NLCA as 'Most fields are medium scale in size, bounded by well-cut hedgerows with some hedgerow trees, although field sizes and the use of wire fencing is greater in the more productive areas. Woodland is generally deciduous or mixed and tends to be concentrated on the steeper hillsides with only occasional copses in the more productive, gently sloping areas.'
- 2.6.4 A landscape and visual impact assessment of the proposals was carried out by TDA and forms Appendix C of this MP and should be read with this MP to fully describe the landscape baseline and to see photographs into and out of the site. *Appendix 1* of the LVIA contains all of the LANDMAP data relevant to the local area, including geology, habitats, historic and Cultural landscape details.
- 2.6.5 Appendix D of this MP shows baseline photographs of the land in our ownership.

2.7. Baseline Heritage Features

- 2.7.1 There are no listed heritage features on the site or the property.

2.7.2 There are the following heritage assets within 2km of the site:

- Goytre Wood Castle Mound , a scheduled monument, ref MM138 Scheduled Monument is 250m to the SE of the proposal site, beyond the boundaries of the applicant's land. It is not visible from the site.
- Three grade II scheduled assets, record numbers 19274, 19275 and 19276 are located at Pen-isha-plwydd Farm 727 m ESE of the proposed dwelling and are not visible from the proposed site.
- The Penbidwal Moated Site, a scheduled monument, ref MM210 is 1.56 km SW of the site and not visible from it.
- The grade II Bridge on River Monnow at Trewyn Mill, record number 87896, is 1.59 km to the west of the site and is not visible from the proposed site.
- Three grade II assets, record numbers 24163, 24165 and 24164 are located at Great Goytre Farm 1.14 km to WNW of site, and are not visible from the proposed site
- Two grade II assets, record numbers 1921 and 84493 are located at Great Campston 1.57 km SE of the site. They are not visible from the site.

2.8. Baseline Transport Impacts

2.8.1 We are currently living on the site whilst carrying out the construction of the buildings and infrastructure that already have permission. Lily leaves the site to work at an osteopathy clinic two days a week in a neighbouring village. The children both get collected and dropped off by the school bus. Pete is working full time on the site's construction and development. We have had two community tree planting days and two volunteer days to help with cleaning and clearing the site over a 12 month period. The site is also currently visited by family, friends and occasionally volunteers.

2.8.2 The Transport Assessment and Travel Plan in Section 11 gives details of existing local transport options and lays out how our travel patterns will change following the development. The ecological footprint assessment details our current travel impacts. Section 11 details the baseline conditions including:

- The relationship of the site to our surrounding towns and villages
- Details of existing access to the site (vehicular and pedestrian).
- Public rights of way through and close to the site
- Existing public transport links
- Our existing transport needs and use.

2.9. Context/Adjacent Land Uses

2.9.1 There are a number of residential farms near the land:

- Little Goytre Farm located some 90 metres to the east of our access
- Tyr Goytre located some 130m metres to the southwest of the access.
- Upper Goytre Farm located to the south of our land.

2.9.2 Byrn Cynefin Permaculture Farm is surrounded by agricultural land. This is either utilised for woodland, pasture/grazing or crop production.

2.10. Tenure

- 2.10.1 We purchased the land in 2022. The land in our ownership, including land which is the subject of the OPD, is registered under Titles number WA780636 and WA439361

3. Design Strategy

- 3.1.1 The design and layout of Bryn Cynefin is grounded in our practice as Permaculture designers. Permaculture is a holistic approach to design that identifies and utilises the natural flows and relationships that exist between living systems and design elements by reducing external inputs and utilising interconnected resources. It's an approach that conserves energy, builds resilience, enhances productivity, and nurtures the health of the people and habitats engaged.
- 3.1.2 To comfortably support our family of four, the design of the site and its land-based enterprises have evolved to make the most of the landscape's physical, ecological and historical characteristics, as well as our existing skills and knowledge. These decisions have been informed by conversations and advice from ecologists (see ecology report), local farmers, landowners, foresters, Woodland Trust representatives, and other regenerative designers in our network.
- 3.1.3 A Permaculture approach to design is one of a continuous cycle of observation, reflection, and adaptation, with ecological sustainability and health at its heart. It is an approach that will guide how we live, work and care for our land now and into the future.

3.2. Design Objectives

- 3.2.1 An effective design must:
- Provide resilient and manageable full time employment for both adults on site with the possibility of providing future land based employment opportunities.
 - Enable our family to meet our essential needs from the land whilst minimising external inputs.
 - Utilise our existing skills and knowledge.
 - Inspire learning and creativity
 - Support a diverse range of resilient land based enterprises and activities focusing on food sovereignty, health, community wellbeing, inclusivity and accessibility.
 - Provide opportunities and shared resources for the local community in relation to access to land and sustainability as well as within the context of the environmental and social challenges we face.
 - Support the conservation, protection and enhancement of key and unique habitats existing on-site.
 - Regenerate and restore neglected habitats to optimise ecological health and biodiversity throughout the site.
 - Be appropriate for the location and integrated within the wider landscape and community.

3.3. Site Design Constraints and Opportunities

- 3.3.1 Site constraints include:
- A NW sloping site (average 13%), with seasonal springs and poor draining boggy areas during winter months
 - Limited seasonal vehicular access to all parcels of land.

- Exposure to strong South-Westerly and cold North-Easterly winds
- Heavy clay soil - poor draining in winter and hard during long dry spells.
- An area of semi-natural ancient woodland (once part of a much larger woodland).
- Some species rich grassland
- Improved formally grazed grassland with limited biodiversity
- No existing mains water or sewer connections.
- Proximity to A465 (traffic and noise)

3.3.2 Site opportunities include:

- Existing access off the A465 with clear visibility splays in both directions
- Existing Steel Portal Barn for initial storage and security, including an adjacent area of hardstanding.
- Existing spring with year round flow and potential for developing other spring sites
- Seasonal springs and waterways on the site present opportunities for a pond network designed to harvest water, provide gravity-fed irrigation, and enhance habitat diversity.
- Potential to explore small-scale (seasonal) hydro and wind power to generate power during darker periods of the year.
- Flat semi-sheltered areas ideal for the siting of key buildings and structure to minimise environmental impact
- Existing woodland blocks that can be enhanced and conserved through thinning and coppicing to provide materials, growing medium (for gourmet and medicinal mushrooms), fuel and soil enhancement (as biochar added to existing clay soil).
- Regeneration of existing grassland, ponds and woodland to increase biodiversity, habitat and the overall ecological health of the site.
- Edge connectivity to surrounding parcels farmland, enabling the inclusion of wildlife corridors, connecting habitats for the benefit of wildlife.
- Established hedgerows abundant in perennial food sources and crops (such as hazelnuts, berries etc) to support self sufficiency.
- Permitted Development Rights for the addition of further infrastructure to support emerging agricultural needs.
- Proximity to A465 and bus stop providing direct transport links to adjacent towns and cities, with easy access to the national rail network.

3.4. Site Design and Layout

- 3.4.1 Central to our design is a holistic integration of water management, soil health, shelter, woodland, energy, accessibility, and food systems, all framed within a regenerative ethos.

Dwelling

- 3.4.2 The dwelling will be located on naturally flat, free-draining ground higher up the site in Upper Field, avoiding boggy areas, frost pockets and ecologically sensitive habitats. Placement will

ensure optimal solar exposure while being sheltered from cold north-easterly winds by a mature hedgerow that also acts as a visual shield. The house is located adjacent to other elements that will require frequent visitation such as the gardens and grazing animals. Surrounding shelterbelts, orchards, and gardens will create comfortable microclimates and productive household-scale food production systems. A new hedgerow and strategic planting to the west of the dwelling will provide a visual buffer and protection from prevailing winds once established, improving both amenity and biodiversity.

Ancillary Guest Cabin

- 3.4.3 The Ancillary Guest Cabin is a repurposed lorry body (2.4 x 6.5 m) that was brought onto site as temporary accommodation whilst we carried out approved planning works. The cabin which is sited in the Orchard Field will provide accommodation whilst we develop the site and construct a more suitably sized home. Designed with OPD 'Zero Carbon in build and use' principles in mind and located on temporary screw pile foundations, the cabin is currently off grid for water and electricity with a localised composting system. The area around the cabin has also been planted with orchard trees, perennial herbs and flowers, mitigating any impact and increasing biodiversity adjacent to the cabin. Once the main dwelling is complete we hope to leave the cabin in its current location in the orchard for it to be used as guest accommodation for visiting family and friends.

Infrastructure

Trackway - (PD application ref DM/2023/00529)

- 3.4.4 A new trackway running south from the entrance to the site (off the A465) up through the Lower Field to the Orchard Field and Upper Field connects all parcels of land and provides access to the new barn, proposed dwelling and green woodwork area. A SuDs design has been approved to mitigate rain water run-off.

Existing Steel Portal Barn/Workshop (extended under app ref DM/2023/00598)

- 3.4.5 The existing steel portal barn and workshop will serve as initial storage, workshop, and processing space whilst the new timber barn is under construction. The existing barn will then be used to store and dry milled timber and machinery, as well as supporting activities taking place closer to the road such as polytunnel growing. In addition to providing processing space and a workshop for the farm, the new extension will also serve as a workshop for the small-scale production of furniture and wooden goods made from timber harvested on-site.

Shipping Container (PD application ref DM/2023/00529)

- 3.4.6 The shipping container currently on site will provide secure tool storage and support a lean-to under which a mobile sawmill can be stored and used when required.

Polytunnel (PD application ref DM/2023/00529)

- 3.4.7 A 50 m² polytunnel will provide a growing space for both self-sufficiency and our land-based enterprises. Its location will enable us to commence growing from the outset, as water can be provided by existing rainwater harvesting located on the adjacent barn. The spring is also located above as an alternative water source if required. Tools and materials can also be stored and secured in the nearby container.

New Barn (PD application ref DM/2023/00529)

- 3.4.8 A new timber barn positioned central to the site on an existing topographical plateau (to minimise earthworks) will support all the agricultural activities that take place in the central and southern parts of the site. This will include providing storage and processing facilities for

the herb growing element of our OPD located adjacent to it, as well as supporting future orchard needs, being a place to store produce, materials, farm equipment and animal feed. As future enterprises emerge it will also provide support to these.

Animal Shelters

- 3.4.9 The inclusion of two field shelters has been proposed in the design. These will provide shelter and shade to grazing animals whilst trees mature, as well as serving as rainwater harvesting and storage structures to provide drinking water for the animals grazing the land below.
- 3.4.10 Permitted development rights will be employed strategically to accommodate polytunnels, livestock housing, or additional infrastructure as needed in the future.

Water

- 3.4.11 Our primary source of drinking water will come from a spring located near the northern boundary. The water is currently stored in 2 x 1000ltr IBC tanks. Water is then pumped via a solar powered pump to other locations around the site where it is stored for use. This system can be expanded to enable more storage if required. Two other locations shown on the plan also have the potential to provide alternative water sources. All structures will harvest rainwater for agriculture and domestic use.

Water Management

- 3.4.12 Given increasing periods of drought and heavy rainfall, reliable access to water underpins both domestic and agricultural productivity and security. Spring water will be captured and stored in multiple locations to ensure year-round supply. This will be complemented by the creation of a swale and pond network designed to harvest surface water, improve drainage, reduce run-off, whilst also creating new wetland habitats. Gravity-fed irrigation systems will be used to provide energy-efficient water delivery, enhancing resilience during dry periods whilst minimizing environmental impact. All roof structures throughout the site will locally harvest and collect rain water for agricultural and domestic use related to them.

Soil Health and Regeneration

- 3.4.13 The heavy clay soils of the site will be improved through the addition of organic matter, compost, and biochar derived from woodland thinning. Areas of improved grasslands will transition to diverse, regenerative pastures by the use of rotational grazing and reseeded with native grasses, legumes and herbs. Areas of species-rich, semi-improved grassland will be actively protected and enhanced, serving as priority zones for biodiversity.

Alley Cropping

- 3.4.14 Alley cropping (as an Agroforestry technique) will integrate rows of perennial crops (fruit trees, nut trees, and berries) with fodder and forage species in the alleys between grazing strips. This approach will provide nutritious fodder for livestock as well as commercial food crops for human consumption. Whilst also providing microclimates, soil fertility, and ecological connectivity. Hedgerows and tree rows also function as windbreaks, habitat corridors, and pollinator support. All of which are beneficial to the planting of annual crops in the future should this be required.

Shelter and Microclimate

- 3.4.15 Shelterbelts and hedgerow creation will buffer the site from prevailing South-Westerly winds and cold North-Easterly exposure, while tree planting and earthworks berms will create microclimates that improve biodiversity and growing conditions. Infrastructure will be sited in naturally sheltered areas where possible, reducing energy demand and enhancing comfort for both people and livestock.

Woodland Management

- 3.4.16 Semi-natural ancient woodland will be enhanced through sensitive selective thinning, coppicing, and natural regeneration. A formal Woodland Management Plan is being prepared and appropriate felling licences will be obtained. Woodland outputs will be integrated into site systems, providing timber for construction, coppice for fuel, and substrates for mushroom cultivation. Woodland edges will be managed as ecotones, fostering higher biodiversity and linking habitats across the site.

Coppice

- 3.4.17 Newly planted coppice stands of sweet chestnut and Alder will provide a future source of fuelwood, poles, and craft materials. Incorporating coppice cycles into the wider land-use strategy will help to deliver low-carbon energy, increase diversity, and create valuable habitats. Coppice management will also support soil improvement through woodchip mulches as well as feeding into biochar production.

Energy

- 3.4.18 Renewable energy will be provided via solar and wind generation. With small-scale hydro being explored in the future as a back-up source.

Composting and Waste Management

- 3.4.19 All organic waste will be composted locally to where it is created and reintegrated into soils, supporting pasture, tree, and perennial crop growth. Nutrient cycling will also be enhanced through combined agroforestry and pasture systems.

Food and Self-Sufficiency

- 3.4.20 Productive hedgerows will be maintained for perennial food crops such as hazelnuts, flowers and berries. Integrated systems including orchards, silvopasture, and agroforestry will diversify outputs and strengthen site resilience. Polyunnel growing will further enhance food security by extending the growing season, protecting crops from extreme weather, reducing pest pressures, and increasing yields, ensuring a steady and reliable supply of fresh produce throughout the year.

Ecological Health and Biodiversity

- 3.4.21 The site's mosaic of grasslands, ponds, and woodland will be actively regenerated to support a rich variety of wildlife. High-value ecological areas will be protected and expanded, with soil, water, and habitat restoration treated as core design objectives. Productivity and ecological health will be in alignment, reinforcing the regenerative character of the landscape.

Access and Connectivity

- 3.4.22 Proximity to the A465 and public transport links will help to reduce the number of car journeys taken as well as supporting the distribution of produce and community engagement.
- 3.4.23 By weaving human settlement directly into ecological and productive systems, Bryn Cynefin will operate as a regenerative landscape where dwellings, infrastructure, and agriculture complement and enhance the natural environment.

4. Business and Improvement Plan

Land Based Activity and Minimum Needs

4.1. Subsistence

4.1.1 Our current food needs are laid out in Table 1 below.

	Annual					
Food category	Consumed		Purchased		Produced	
	Cost / value		Value		Value	
Meat and meat products (excl. poultry)	£440	9.44%	£440	9.44%		0.00%
Poultry meat and poultry products	£400	8.58%	£400	8.58%		0.00%
Fish and fish products	£220	4.72%	£220	4.72%		0.00%
Vegetables	£1,100	23.59%	£1,100	23.59%		0.00%
Fruit	£440	9.44%	£440	9.44%		0.00%
Vegetable and animal oils and fats	£110	2.36%	£110	2.36%		0.00%
Dairy products- butter, cheese and milk	£780	16.73%	£780	16.73%		0.00%
Grain mill products; flours of all sorts any grains, pulses and rice	£73	1.57%	£73	1.57%		0.00%
Bread; rusks and biscuits; pastry goods and cakes	£352	7.55%	£352	7.55%		0.00%
Cocoa; chocolate and sugar confectionery	£88	1.89%	£88	1.89%		0.00%
Other food products (incl. sugar and preserves) non alcoholic drinks	£110	2.36%	£110	2.36%		0.00%
Eating out and take away foods	£550	11.79%	£550	11.79%		0.00%
Total	£4,663	100.00%	£4,663	100.00%	£0	0.00%

Domestic animal food purchases						
Pets - dog and cat food	£0	0.00%	£0	0.00%		0.00%
Pets - other	£0	0.00%		0.00%		0.00%
Poultry	£320	100.00%		0.00%		0.00%
Livestock	£0	0.00%		0.00%		0.00%
Total	£320	100.00%	£0	0.00%	£0	0.00%

Table 1 existing food needs

Domestic Food Production at Year 5

4.1.2 Section 7 Land Management details the size and locations of the different allocations of land for domestic production, commercial production, landscape and ecological benefit. The domestic food production summarised here in section 4 should be read alongside the land based enterprise details and the information in Section 7.

- 4.1.3 We are omnivorous with our current diet predominantly based on fruit and vegetables, grains, dairy products and eggs and a small amount of good quality locally reared meat and fish. Except for grains and some dairy, we will be able to produce a substantial amount of our food from the land and also have surplus for sale or to give to friends, family or foodbanks.
- 4.1.4 We are committed to living more simply and resourcefully by growing our own fruit and vegetables. We will preserve food, making use of seasonal gluts of local produce by making ferments, pickles, jams, chutneys and juices. We will also barter produce with other local smallholders, we already prioritise buying locally and ecologically grown fresh food, and we can buy staples such as rice and pulses through Suma, a wholefood co-op. Due to the low-cost price of grains and grain products it makes sense to buy rather than grow grain products on a small scale.

Storage, Season Extension & Preservation

- 4.1.5 From midsummer to the end of winter, living from the land in the British climate is relatively easy. There is a very good range of seasonal vegetables from the garden and soft fruit through to all the top fruit coming into season from the forest garden in bountiful succession. The chief challenge then becomes one of production in the lean time of year, and also the storing of gluts and intentional produce for the hungry gap in Spring.
- 4.1.6 The challenge will be mitigated to a great extent by the availability of protected cropping (in the polytunnel). Storage will also be of vital importance. We will have a dry cold storage in the barn for the storage of cabbages, root crops and alliums alongside the crops which will have been preserved by bottling, drying, pickling and fermenting.

Fruit and Nuts

- 4.1.7 The Forest Garden (85 m²) close to the house will contain six apple trees, six pear trees, 30 raspberry canes, six redcurrant bushes, six gooseberry bushes, 20 m² of strawberries. Undercropping with comfrey (fertility mulch), and pollinator flowers (nasturtiums, calendula, borage) chives, mint and nasturtiums (pollinator and chicken feed plants). There is plenty of space to add more fruit if needed. We will use netting and crop protection as appropriate to protect the fruit.
- 4.1.8 The Orchard planted in Orchard Field in 2025 containing 30 fruit and nut trees and the existing fruit trees planted in 2022 (cherry, greengage and three apples) will produce fruits and nuts increasingly over time.
- 4.1.9 Additional fruits and nuts (hazel nuts) will be foraged from the hedgerows around the land.

Vegetables

- 4.1.10 Vegetables will be grown in outdoor minimal dig raised beds. Crop covers and the polytunnel (50 m²) and greenhouse (21 m²) will provide sheltered cropping space to extend the season. We have allowed 250 m² of outdoor vegetable beds in four sections to accommodate rotation. We will create four permanent sections of no-dig beds (about 65 m² each), rotated annually to reduce pests/disease. We will also include plants like marigold, calendula, chives, parsley, dill, rocket, rosemary and oregano to reduce pests:

Bed	Year 1	Year 2	Year 3	Year 4
1	Legumes (peas, beans, clover undersow)	Brassicas (broccoli, kale, pak choi, sprouting broccoli, mizuna)	Fruiting crops (tomatoes, peppers, cucumbers, squash)	Roots & alliums (carrots, beetroot, onions, garlic)

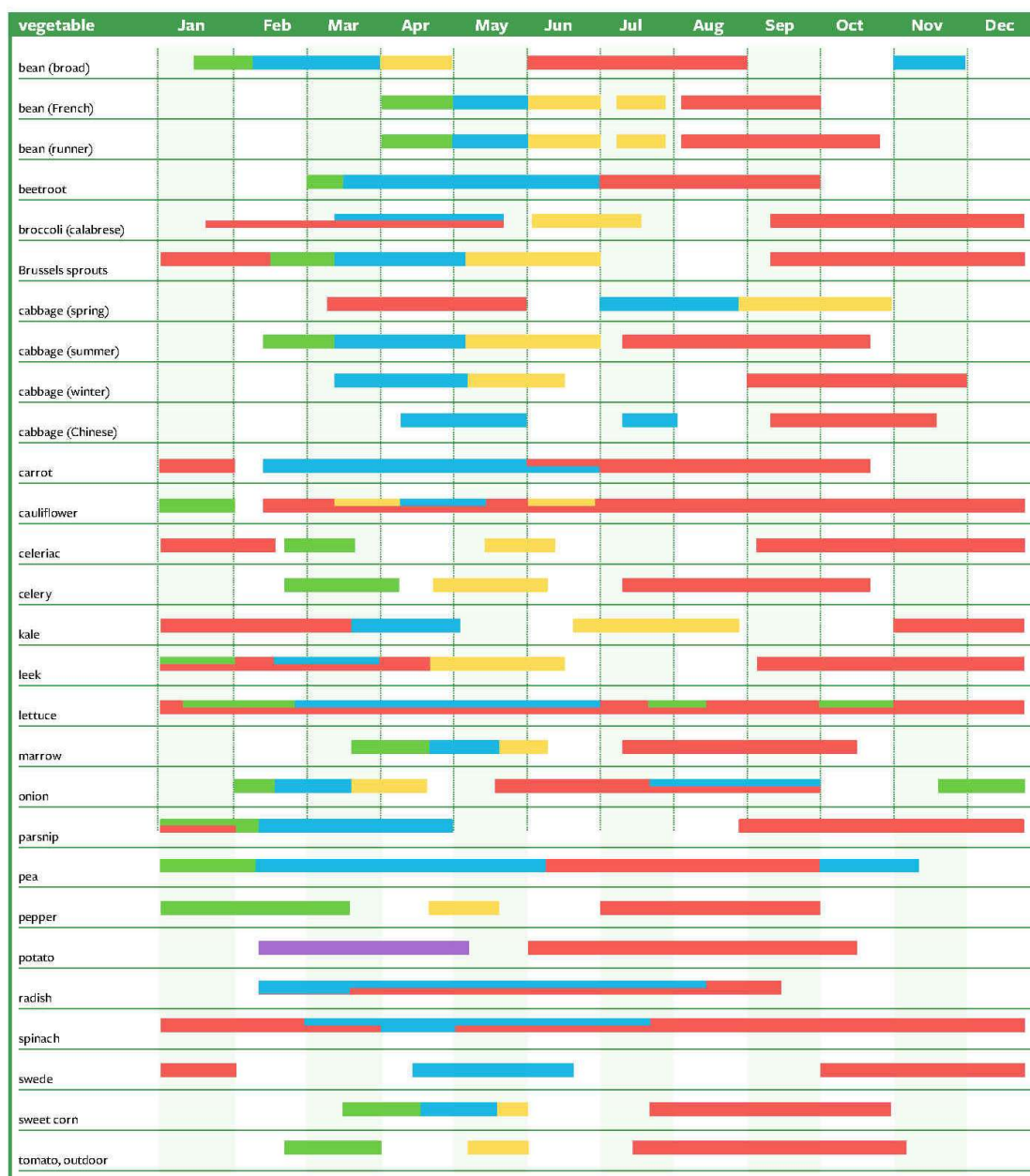
2	Brassicas	Fruiting	Roots/Alliums	Legumes
3	Fruiting	Roots/Alliums	Legumes	Brassicas
4	Roots/Alliums	Legumes	Brassicas	Fruiting

Table 2 Vegetable crop rotations proposed

- 4.1.11 A 250 square meter allotment is considered by the Local Government Association to provide enough to feed a family of four. If needed there is much more area available, and we will expand the growing area as required.
- 4.1.12 Table 3 below from the RHS gives an indication of the sorts of vegetable crops that can be produced and when during the year. Our growing season is roughly in line with that shown including our sheltered cropping and the use of crop covers and cloches to protect early and late outdoor crops.

Chickens, Sheep and Ducks

- 4.1.13 We will be raising chickens for commercial egg sales (a flock of around 25 birds) and ducks (three birds), ten sheep and two cattle will be principally used for managing the land with meat and milk as bi-products. Stocking numbers and grazing regime will be maintained in line with the recommendations of the PEA at 1 Livestock unit per ha on the unimproved grassland and slightly higher levels on the semi-improved grassland within the silvopasture systems. This will allow meat as a bi-product for our domestic use and we will provide for all our domestic meat, eggs and some fats through using the surplus from this production. We have allowed for the costs of animal feed for domestic use in our minimum financial needs.
- 4.1.14 We will consume approximately 8-10 chickens a year, which we will slaughter and butcher ourselves. In addition we will eat eggs from the main flock. We will also consume 1-2 lambs per year, which will be taken from our land-management flocks, and replenished annually. Lamb for our consumption will be slaughtered onsite by a home slaughter service. We will also experiment with making our own cheese and yoghurt from the sheep's milk and eventually the cattle's.
- 4.1.15 We estimate that at least 25% of the chicken and duck feed can come from forage and other food from the land.
- 4.1.16 We consider that conservatively:
- We will be able to provide for all of our meat, poultry and eggs and a proportion of the fats and dairy produce we consume.
 - We will be able to grow 80% of the vegetables we need during a year
 - We will be able to substitute for 66% of the fruit we currently purchase with fruit grown on the land.
- 4.1.17 The annual costs of producing our domestic fruit and vegetables is accounted for as £130 (see EFA)



Key
 ■ sowing indoors ■ sowing outdoors ■ planting tubers, sets or offsets ■ planting out seedlings ■ harvesting



Table 3 veg cropping planner -copyright RHS

- 4.1.18 Table 4 below shows how our food consumption will change by year 5.
- 4.1.19 This shows we can meet 44% of our food needs from the land. The OPD target is to produce 30-65% of household food needs from the land and with income generated by land based activity (Paragraph 3.25 of practice guidance). We have therefore allocated the balance of costs for foods up to 65% (£961 + £135 + £130 = £1,226) to our minimum financial needs. NB if we allocated the balance of costs for foods up to 100% to our minimum financial needs this value increases by a further £1,621.

	Annual					
Food category	Consumed		Purchased		Produced	
	Cost / value		Value		Value	
Meat and meat products (excl. poultry)	£440	9.50%	£0	0.00%	£440	9.50%
Poultry meat and poultry products	£400	8.63%	£0	0.00%	£400	8.63%
Fish and fish products	£220	4.75%	£220	4.75%		0.00%
Vegetables	£1,360	29.35%	£260	5.61%	£1,100	23.74%
Fruit	£150	3.24%	£50	1.08%	£100	2.16%
Vegetable and animal oils and fats	£110	2.37%	£110	2.37%		0.00%
Dairy products- butter, cheese and milk	£780	16.84%	£780	16.84%		0.00%
Grain mill products; flours of all sorts any grains, pulses and rice	£73	1.58%	£73	1.58%		0.00%
Bread; rusks and biscuits; pastry goods and cakes	£352	7.60%	£352	7.60%		0.00%
Cocoa; chocolate and sugar confectionery	£88	1.90%	£88	1.90%		0.00%
Other food products (incl. sugar and preserves) non alcoholic drinks	£110	2.37%	£100	2.16%	£10	0.22%
Eating out and take away foods	£550	11.87%	£550	11.87%		0.00%
Total	£4,633	100.00%	£2,583	55.75%	£2,050	44.25%

Year 5 calculations

Value of 30% of food needs	£1,390
Value of 65% of food needs	£3,011
Value of food produced	£2,050
Additional food costs to add to minimum financial needs	£961

total additional food @ 100%

interpretation £2,583

Domestic animal food purchases						
Pets - dog and cat food	£0	0.00%		0.00%		0.00%
Pets - other	£0	0.00%		0.00%		0.00%
Poultry	£330	100.00%	£250	75.76%	£80	24.24%
Livestock	£0	0.00%		0.00%		0.00%
Total	£330	100.00%	£250	75.76%	£80	24.24%

Year 5 calculations for animal feed

Value of 30% of food needs	£99
Value of 65% of food needs	£215
Value of food produced	£80
Additional food costs to add to minimum financial needs	£135

Table 4 Food consumption and production at year 5

Minimum Financial Needs at Year 5

- 4.1.20 The OPD Guidance lays out the categories of expenditure to include in your minimum financial needs calculations, these are shown in table 5 below.

Minimum needs Year 5

Categories	Minimum Needs
Additional food (65% Interpretation)	£961
Domestic animal feed and production costs	£135
Domestic fruit and veg production costs	£130
Domestic energy	£0
Clothing	£750
IT/communications	£600
Domestic travel	£2,858
Council tax (band A)	£1,370
Total	£6,804

Table 5 Minimum financial needs

- 4.1.21 Our annual vehicle costs at year 5 are calculated as follows (table 6).

Annual fuel cost	£1,570
Tax	£283
MOT/Service	£110
Maintenance	£200
Insurance	£1,120
TOTAL	£3,585
Business - 29%	£925
Domestic - 71%	£2,358
Train fares	£400
Bus fares	£100
Total Domestic	£2,858

Table 6 Vehicle costs

4.2. Detail of the production across the land

Soil Improvement & Fertility

- 4.2.1 Subsistence at Bryn Cynefin will grow from 'soil first' horticulture - soil management which builds soil fertility and microbial diversity. This will be achieved by:
- Addition of organic matter from compost

- The use of green manures both in rotation with and alongside vegetable crops
- The inclusion of poultry and their manure in vegetable rotations
- The use of fertility building leys and permanent agroforestry polycultures
- Reincorporation of crop residues in situ, providing protection for the soil
- The use of woodland resources as soil improvers: wood chip; 'hugelkultur' beds and biochar.

4.2.2 Whilst tillage and light machinery might be used in the early stages of subsistence development, for example, terracing the herb and vegetable garden, or digging the ponds; in the medium term the site will be no-dig or minimal dig systems. Under no-dig conditions 'soil first' gardening creates a soil which becomes a long-term carbon sink as well as high in fertility and biodiversity.

Fruit and Vegetable growing and perennial foraging

- 4.2.3 There will be a protected cropping areas (polytunnel (50 m²) and greenhouse (21 m²) as well as the forest garden (85m²), herb garden (75 m²) and domestic market garden (250 m²), with space to add a large area of additional outdoor growing beds to the South of the barn in the lower field if we need to increase yields in the future as the business grows.
- 4.2.4 The polytunnel will be primarily for our land based enterprises with winter salads and crops for sauerkraut grown within it. The polytunnel will also have the added benefit of enabling us to supplement, extend and diversify our domestic crops over both summer and winter. The polytunnel will enable us to expand the range of vegetables we can grow for our fermenting and condiments over time – such as making chilli sauces, cucumber pickles and chutneys.
- 4.2.5 The polytunnel will allow for a series of no/min dig beds providing growing space for our ferment business and winter salads.
- 4.2.6 The majority of the ingredients for the teas, balms and tonics already exist onsite and will be foraged. We will also develop a cultivated herb garden to add nutritional value, colour and flavour to the teas and tonics (see *appendix 1* of the Land Based Business Plan which is Appendix E of this MP). The herb garden has a dual purpose as these plants are also known to be great pollinator plants, which in turn supports the insect, bat and bird life onsite. In 2024 and 2025, with support from Stump up for trees, we planted over 1000 native hedgerow trees, creating an additional 400m of hedgerow, including 401 hawthorn, 283 Hazel, 28 dogrose and 59 elder which will enhance the foraging landscape whilst creating habitats and corridors for wildlife, connecting up wild spaces and parcels of woodland across the site.
- 4.2.7 Foraging and wild-tending are a key part of our land management plan. Wild tending allows us to enhance biodiversity and ecological function, whilst increasing the availability of nutrient dense wild foods across the site to create a rich perennial food-foraging landscape.
- 4.2.8 We will also tend areas to regenerate biodiverse grasslands, following the recommendations of Steph Tyler, outlined in her Plant Species Survey of Bryn Cynefin (see PEA *appendix B*).

Silvopasture and rotational grazing - sitewide

- 4.2.9 We will manage the grazing using a multispecies pasture rotation (MSPR) system, which symbiotically stacks multiple animal production enterprises (i.e., chickens, sheep, and cattle/pigs) on one landscape.
- 4.2.10 The main animals in our multi species pasture rotation system will be sheep, cows and chickens. We will start with 10 Hebridean sheep which are very hardy and can lamb and live outside 12 months a year. 4 acres of rotational pasture will provide grazing for our sheep,

based upon the carrying capacity of 2-3 ewes per acre. Our neighbour has been grazing his flock of Hebridean on our upper and lower fields, and we will buy the sheep directly from him, knowing they fare extremely well on this site. We have chosen to start with a small flock, primarily for land management the holistic benefits of caring for animals (rather than meat production), with the option of slaughtering 1-2 lambs onsite annually for personal meat consumption. We will have 2 heads of belted Galloway cattle (as they are small, hardy outside 12 months of the year, suited to exposed, sloping terrain and don't compact the ground). Initially we will have a small flock of 25 egg-laying chickens that will become part of a rotational grazing plan, by way of a mobile chicken tractor. Future enhancements beyond five years could include pigs and a working horse but we will wait to see how the system functions before considering these additions.

- 4.2.11 Research¹ shows that under MSPR, soil carbon and other soil health indicators show dramatic improvement after establishment, sequestering an average of 2.29 tonnes of carbon per hectare per year. Incorporation of soil carbon sequestration into the life cycle assessment reduced net greenhouse gas (GHG) emissions of the multi species pasture rotation by 80%. MSPRs take advantage of an “agromutualism” that builds symbiotic relationships across the site leading to ecological and economic benefits (reducing the cost of poultry feed, for example). This type of management system differs from industrial methods by focusing on biodiversity and mimicking natural ecological mechanisms. Multispecies pasture rotation makes efficient use of land compared with typical grazing systems, and simultaneously regenerates ecological function including soil health, resilience, greenhouse gas mitigation, and biodiversity. 'When comparing this approach to a business-as-usual commodity-based approach, and including soil carbon sequestration, the overall emission footprint of the (MSPR) approach was 3-fold less.'
- 4.2.12 Our Site Plan shows areas of trees intentionally incorporated into pastureland for grazing livestock. The trees will provide various benefits, such as shade, shelter, and fodder for the animals, as well as additional fruit crops over time. The livestock can also help manage vegetation and improve soil health. We will achieve this through rotational grazing, moving the animals across the site systematically to allow grazed areas to rest and recover, which in turn leads to healthier forage, healthier soil and better utilisation of resources.
- 4.2.13 Our whole site has been designed with rotational grazing practices in mind. The trees in a silvopasture system can be vulnerable to overgrazing, especially when young, so using rotational grazing and appropriate electric fencing will help to protect the trees and allow forage to grow in the establishing years.

Sheep management

- 4.2.14 The silvopasture alleys in the orchard will be grazed by sheep, the fruit and nut trees will be guarded by fencing for protection. In addition to pasture, clumps of tree fodder will be designated for grazing across the site. Flock will have access to a range of tree fodder.
- 4.2.15 Rotational grazing will reduce parasitic load and levels will be monitored through faecal egg counting. We will use moveable electric fences and some permanent fencing to define the rotation areas. To move the sheep, we will set up the new boundary next to the area the sheep are in. Opening a 'gate' between the two fences will allow the sheep to access the fresh pasture. This will be defined by our rotational grazing plan, which will change based on our observations throughout the year.

¹ <https://www.frontiersin.org/journals/sustainable-food-systems/articles/10.3389/fsufs.2020.544984/full>

- 4.2.16 Grasslands respond most rapidly to high density grazing and the resulting nutrient cycling and hoof action. We will survey our pasture over several seasons, building up data and insights specific to our site. This will help us to gain knowledge of the interrelationship between grazing and pasture recovery and help us find the optimal stocking density for thriving pasture here on Bryn Cynefin.
- 4.2.17 During winter months the sheep's diet will be supplemented with our own hay and other tree fodder grown onsite - including tree hay and willow silage. We will monitor the flock through condition scoring to ensure that the animals are fit and healthy. Each year, we will send 1-2 sheep to slaughter and store the meat in our chest freezer for our own consumption, 2x 20kg lamb can provide 80-100 meals.

Tree fodder

- 4.2.18 Trees generally contain higher levels of micronutrients than grasses. Tree fodder is a traditional livestock practice that has largely died out in the UK. There is renewed interest in the potential for using tree fodders particularly for addressing micronutrient deficiency and for their anti- parasitic properties².
- 4.2.19 The use of trees as a fodder crop to overcome pasture shortage during summer is a common practice in hot countries. Establishing fodder crops is likely to be especially beneficial in light of climate change. Whilst white mulberry is considered to be the best tree fodder nutritionally, alder, ash, hazel, willow and blackberry are also suitable and are all readily and widely available here onsite (unlike white mulberry, which is slow to grow and would be costly to buy at a replenishable volume).
- 4.2.20 While overconsumption of tannins can have negative effects in restricted feeding trials, research by Fred Provenza indicates that animals are able to self- regulate intake to a beneficial level. We will be providing free choice forage, so we do not envisage an issue with tannins. Research has shown that the moderate consumption of tannins offers several positive effects for ruminants, including increased milk production, better growth of fibre, increased lambing percentage, and most notably a reduction in risk of bloat and various problems associated with internal parasites.
- 4.2.21 Research also indicates that 'diets rich in tannins reduce methane emissions in grazing ruminants, which is a major critique of grazing systems. Trees and shrubs with tannins essentially slow down the rumen, which decreases the emissions of methane³.
- 4.2.22 Hebridean Sheep are natural browsers, so they should respond well to the availability of tree fodder to allow them to utilise a wider range of food resources. If they seem hesitant about making use of tree fodder, we will use Kathy Voth's training methods to establish a routine which normalises the new foodstuff.
- 4.2.23 As well as providing access to fresh tree fodder, we will also explore using 'tree hay' for winter use. In recent trials on the Knepp Castle Estate in southern England, bundles of tree hay, or 'faggots', have been stored fresh (green), horizontally under shelter in a tight stack. Many of these faggots, of different species of trees and shrubs, still had quite green leaves even after a season or two of storage, some even after 24 months. Bundling tree hay tightly is important so that it does not suffer from fungus or mould.

² Lynn Cassells and Sandra Baer <https://agricology.co.uk/resource/tree-fodder-what-why-and-how/>

³ Dietary mitigation of enteric methane emissions from ruminants: A review of plant tannin mitigation options, [Byeng R. Min a](#), Sandra Solaiman b, [Heidi M. Waldrip a](#), [David Parker a](#), [Richard W. Todd a](#), [David Brauer a](#)

- 4.2.24 There has been UK research into the potential of willow silage as a decent quality feed. This is a good fit for our production system, so we are allocating space near our sheep shelter to ensile tree fodder for silage. We note that this is an area into which more research is needed and we will be interested to see the nutritional profiling and efficacy data as it emerges.
- 4.2.25 Using tree fodder at Bryn Cynefin will reduce our need for outside inputs, lowering carbon footprint and spending, in turn increasing resilience within the system.

Silvopasture laying chickens

- 4.2.26 Poultry are a good fit for silvopasture systems. They provide fertilisation and pest removal services and they benefit from the tree cover. Data suggests that raising laying hens in a silvopasture system has positive benefits on production. A study in 2012 compared 33 flocks with tree cover to 33 without. It showed that chickens with tree cover produced eggs with better shell quality and reduced the number of 'seconds' during collection and packing. Health and welfare benefits of agroforestry poultry systems include reduced stress, lower levels of injurious feather pecking, and reduced mortality.
- 4.2.27 Joel Salatin has long advocated using hens to sanitise the pasture after herbivores on his grass-fed meat farm. Having poultry following animals like sheep and cattle is an established rotational management technique. Flies lay their eggs in sheep manure and then bother the sheep. We intend our hens to follow the rotation pattern the sheep have taken, with roughly 4 days between them. Around this time the fly larvae levels should be peaking, making the pest management service of the chickens most effective.
- 4.2.28 In terms of feed, the free-range grazing will be supplemented with soaked/sprouted grain that can increase nutrition density and enzyme content; grain volume is doubled, and less grain is needed due to increased quality of the feed. We will also supplement with surplus or caterpillar-spoiled leafy greens and cabbage, and supplement with plants and flowers comfrey, Calendula, sunflower heads and nasturtiums all of which have been shown to have multiple health benefits for chickens. Simple compost piles will be established in areas of pasture, using cut fodder, hay, wood chip and other plants. This will provide habitat for insects, worms etc. When the chickens rotate to these areas they will be able to pick through these and supplement their diet.
- 4.2.29 A mobile coop on a lightweight frame will be used to rotate the chickens around the silvopasture system. The coop will be moved in the mornings, and electric poultry netting set up in the new location before letting the hens out to forage. Perkins, who runs a similar system on a larger scale, notes that with a well designed mobile system, 'the daily move takes less than 25 minutes when you know what you are doing'. Living on site will help ensure the move is completed early each morning and can be integrated with other animal and plant care schedules.

Managing nutrient run-off

- 4.2.30 Agricultural pollution is a serious ecological issue. We believe in holistic land management techniques and effective nutrient use. Our practices will enable us to produce food while reducing pollution significantly below the baselines for farming activities. Rather than spreading liquid fertilizer, we will focus on organic fertility with a focus on using nitrogen fixing plants. Animal manure will be proactively managed as a valuable resource, particularly through combining with hay for composting and mycofiltration swales.
- 4.2.31 As our land is sloping we will use swales so as to ensure that runoff from the animal areas is captured and nutrients harnessed before any run off continues to run downslope.

Woodland management

- 4.2.32 We have commissioned a full woodland management plan, which is currently being developed. The woodland management plan takes into account the Woodland Inventory carried out in 2024 and a Tree Survey of all the woodland on the site. We have already taken action on the woodland that borders the A465 by felling defective trees identified in the survey.
- 4.2.33 Harvest will happen annually in small, sustainable amounts to maintain woodland health and biodiversity and to allow consistent material supply. This method is Carbon-positive while producing usable materials, and fitting in with regenerative forestry, and ASNW protection.
- 4.2.34 Table 7 below summarises the key elements of the production areas. It should be read in conjunction with Section 7 below and the proposed land use + management plan drawing number BC-P109.

Site Features	Area m2	Notes
Productive foraging hedgerows	1668 m	Across the land
Domestic veg production area	250	Upper Field – adjacent to OPD dwelling 2 plots split into 4 rotation areas
Domestic forest garden	580	Upper Field – adjacent to OPD dwelling
Domestic Greenhouse	21	Upper Field – adjacent to OPD dwelling
Small wood – copse	2686	Copse area SE of Orchard Field
Mushroom production area	13m2 processing, 24m2 for storing logs 10 m2 for shocking and fruiting area	Within small wood copse. Room to expand when required.
Orchard	4300	Orchard Field

		Local varieties – see table, providing biodiversity enhancement and landscape gain
Herb garden	75	Lower Field see Apothecary Garden Plan appendix 1 within the business plan document
Pasture	6025	All Fields Species rich grassland (see <i>PEA appendix B</i>) managed as per Steph Tyler and Abbey Saunders, ecologist's recommendation
Polytunnel	50	Lower Field
Coppice (new)	1185	Upper Field
Big wood	10890	SINC Managed for landscape and wildlife as per woodland management plan and ecologist's recommendation
Temporary structures	113 28 28	House Cabin Geodome
Buildings	148 121 Inc elsewhere Inc elsewhere Inc elsewhere As above As above	New Barn – already approved Existing Barn /workshop Compost toilets x2 Green woodworking shelters x2 Animal Shelters x2 Polytunnel Greenhouse
Total	28135	
Total land available	61710	
Access tracks	1870	

Table 7 key elements of the production areas.

4.3. Enterprise: Income

- 4.3.1 We will utilise a stacked enterprise model with multiple distribution channels and products requiring input at different times in the year that can also sell well at different times of the year to build resilience within the system - there will be multiple revenue streams distributed across the year. The umbrella name for these businesses is **Cynefin Kitchen**.
- 4.3.2 All products are grown onsite. When product ingredients need to be brought in, we will prioritise locally sourced (ideally within 15 miles), and where not possible, exclusively Welsh (for example, Anglesea salt). Products will be nutritionally dense, small batch and handpicked.
- 4.3.3 Our mission is to cultivate resilience and wellbeing by weaving together local ecology, local economy, and local people through regenerative land practices, healthy produce, education and community-building.
- 4.3.4 Our land-based Business Plan 'Bryn Cynefin OPD Business Plan Aug 2025' is found in Appendix E of this MP. This describes how the site will provide for our needs and is summarised in Table 8 below. This shows that under our anticipated scenario net income is anticipated to be £26,011, exceeding our minimum needs with all our additional food costs taken into account:

SUMMARY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
INCOME					
Capital/assets introduced	10000	0	0	0	0
REVENUE					
CSA quarterly box	£3,900	£7,100	£9,800	£11,600	£13,400
Biochar	£158	£158	£158	£158	£158
Timber	£2,460	£3,690	£5,130	£5,130	£5,130
Tea	£1,440	£1,728	£2,074	£2,491	£2,995
Sauerkraut	£460	£690	£920	£1,150	£1,380
Eggs	£2,318	£2,318	£2,318	£2,318	£2,318
Salad	£2,430	£2,430	£2,430	£2,430	£2,430
Mushrooms	£8,360	£10,560	£12,760	£6,600	£6,600
Lamb sales	£0	£0	£0	£0	£0
Workshops and courses	£400	£800	£800	£1,200	£1,200
TOTAL	£31,926	£29,474	£36,389	£33,077	£35,611
Capital expenditure	£7,500	£0	£4,000	£0	£0
EXPENSES					
COST OF SALES					
Cow costs	0	0	1600	1600	295
Duck costs	£5	£5	£5	£5	£5
Sheep costs	£1,150	£550	£550	£550	£550
CSA costs	£955	£1,719	£2,101	£2,483	£2,865
Biochar costs	£515	£15	£15	£15	£15
Woodland products costs	£1,150	£1,150	£1,450	£300	£300

Salad costs	£345	£345	£345	£345	£345
Tea costs	£320	£384	£461	£554	£666
Sauerkraut costs	£130	£195	£260	£325	£390
Chicken Egg and Chicken costs	£1,320	£600	£600	£600	£600
Mushroom costs	£411	£519	£626	£324	£324
Delivery vehicle Expenses	£925	£925	£925	£925	£925
Sub- TOTAL	£7,226	£6,407	£8,938	£8,026	£7,280
LESS EXPENSES					
Electricity	£0	£0	£0	£0	£0
Marketing	£250	£250	£250	£250	£250
Repairs and renewals	£500	£500	£600	£600	£600
Memberships	£100	£100	£100	£100	£100
Farm Insurance	£755	£755	£755	£755	£755
Sundries	£40	£40	£40	£40	£40
Sub- TOTAL	£1,645	£1,645	£1,745	£1,745	£1,745
GROSS PROFIT					
	£15,554	£21,421	£25,706	£23,306	£26,586
Less depreciation at 5%	£375	£375	£575	£575	£575
TOTAL EXPENSES					
	£16,746	£8,427	£15,258	£10,346	£9,600
NET PROFIT					
	£15,179	£21,046	£21,131	£22,731	£26,011
Cashflow					
	£15,179	£36,226	£57,357	£80,088	£106,098

Table 8 Enterprise profit and loss summary

5. Site Occupants and Labour Requirement

- 5.1.1 The OPD is intended to provide for the needs of one family of two adults and two children.
- 5.1.2 Labour will be provided by Pete and Lily. We will ensure that we are able to support our minimum food and income needs between us. This table shows how we will be using a stacked enterprise system with interlocking timelines to manage workflow and ensure that the two of us will be able to run the site effectively throughout the year, to support our minimum food and income needs
- 5.1.3 Based on an 8-hour day, we estimate we will input around 4 days/week or 2 days each. There will of course be tasks such as livestock care that will require input across all days of the week. If we allow for an extra 2 days per week contingency, this is still well within capacity, even with caring for a family and one day a week of off site work.
- 5.1.4 Our estimate of the labour requirement is around 1,795 hours per year as shown in Table 8 and Table 9 and 10 below. In addition, there will be seasonal tasks such as grassland, hedgerow and woodland management which will add a further 275 hours. We are sure we can run the enterprise effectively between us.

products	Commencing year	Distribution channels	Fresh/packaged	Production time	Hours per week	Hours per month	Total Number of months /per year	Hours per year
Herbal Teas, Tonics and balms	June 2026	Market Online shop Quarterly box scheme events	packaged	Quarterly - spring/summer/autumn/winter	4	Harvesting: 8 hrs Processing 8 hrs Packaging 4 hrs	4	80
Winter salads	Nov 2026	Market Online shop Quarterly box scheme	fresh	Sept-Feb	7.5	sowing/Harvesting - 16hrs Packaging 6 hrs Distribution 2 hrs	6 months	144
Eggs	April 2026	Market Online shop Quarterly box scheme	Fresh	March-Sept - Weekly	10	Chicken care - 30hrs Packaging 10 hrs Distribution 2 hrs	7 months	294
Fermented foods	Dec 2027	Market Online shop Quarterly box scheme events	packaged	Twice per year- Feb/Nov	7 hrs	Cabbage growing - 15 hrs Processing and packaging - 8 hrs Distribution 2 hrs	2 months	50

Foraged condiments	October 2026	Market Online shop Quarterly box scheme events	Packaged	Twice per year March and October	6.5	Harvesting - 16hrs Processing and packaging - 8 hrs Distribution 2 hrs	2 months	52
Sustainable wood products	Jan 2026	Market Online shop Quarterly box scheme events	Packaged	Made to order Nov-Feb		Tree felling 3 days Table - 3 days 3 hours - chopping board 2 days bench Salad bowl - 3 hrs Total Tables -12 days Benches 8 days Chopping boards - 11days Bread bin - 6 days	4 months	320
Woodland mushrooms	May 2026	Market Online shop Quarterly box scheme	Fresh	June-Oct		Based on 100 new logs per year Inoculation - 2 days per year Felling - 5 days per year innoculating Harvesting 300 logs - 4 days Packing 1day	5 months	315
Workshops and education	October 2025	Delivered onsite, promoted online through social media and mailing lists	Non-physical product	Quarterly		Planning and marketing - 8 hrs per event 8hrs-delivery 2 hrs debrief	4 months	72
Total hours/days								166 days
Total per person								83 days

Table 9 Estimate of Enterprise labour requirement

Produce	tasks	Hours per week	monthly	Months p/a	Yearly in hrs/8hr days
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Vegetable garden 250m	seeds/planting out/watering/harvesting	7hrs	30.1hrs	11	328/41days
Orchard trees X 6	Mulching, watering, pruning, harvesting	1 hr	4.3	11	47.3/6 days
Eggs	Moving the coop/ cleaning the coop	1hr	4.3	12	51.6hrs/6.5 days
Water	Cleaning waterfilters, filling tank	1 hr	4.3	12	51.6hrs/6.5 days
Sheep		4hrs	16hrs	12	180 hrs/23 days
Total hrs		10	39		517.5/64.6 days
Hours per person					259hrs/32.34 days

Table 10 Estimate of self-sufficiency labour requirement

6. Sole Residence

- 6.1.1 We confirm that the dwelling proposed within this application will be our principal residence and it and the ancillary cabin will not be offered for holiday let of any sort.

7. Land Management and Improvement

7.1. Land Management Strategy

- 7.1.1 Our land management plan is laid out below. It is to be read alongside our Business Plan found in Appendix E of this MP.
- 7.1.2 The management and improvement strategy of the land has been carefully planned to take into consideration the existing biodiversity, landscape and cultural features. Land management activities are contextualised to the site and will be implemented where and when they are best suited.
- 7.1.3 Table 11 below summarises the proposed land management across the farm. It should be read in conjunction with Section 4 above, the other narrative information in section 7 and the proposed land use + management plan drawing number BC-P109. Together these provide the detail of how the land will change and be managed over time.

Site Features	Drawing BC-109 Ref number	Area ha	Management Notes
Broadleaf Woodland semi-natural ancient woodland	Woodland	1.089	Selective thinning (30%) of existing Alder, Willow and Birch over a 15 year period to promote the establishment of naturally seeded slower growing broadleaf trees. Underplanting and guarding of new trees and selective clearing of undergrowth to prevent competition, whilst maintaining habitat. Preservation of some standing and fallen deadwood for habitat and biodiversity gain. Observing best forestry practice and acquiring appropriate licences when required.
Pasture Lower Field	LF	1.287	Semi improved grassland to be maintained through rational grazing of sheep and cattle. Areas to be seeded with local wildflower seed mix. Location of timber frame barn mid site and trackway extending to the south boundary of the field. Barn, Workshop, container, polytunnel and

			hardstanding situated next to the northern boundary.
Pasture Orchard Field	OF	0.6953	Semi improved grassland mild acidity clay soil. Rotationally grazed by cows, sheep and chickens (using a mobile tractor). Native herbs, grasses and legumes added for forage and animal health, increased biodiversity and to improve soil structure. Sub soil ploughing carried out on contour to enhance drainage and promote deep root penetration, Pasture edges seeded with local wildflower seed mix. Control bracken at field edges to prevent spread, cutting and rolling as required.
Pasture Upper Field	UF	0.7938	Semi improved grassland mild acidity clay soil. Rotationally grazed by cows, sheep and chickens (using a mobile tractor). Native herbs, grasses and legumes added for forage and animal health, increased biodiversity and to improve soil structure. Sub soil ploughing carried out on contour to enhance drainage and promote deep root penetration, Pasture edges seeded with local wildflower seed mix.
Bracken Lower Field	B	0.1072	Left to regenerate naturally - monitored for spread into meadow, cut and rolled as required
Swales and Ponds Lower Field	SP1	0.0416	Create contour swale structures and plant with moisture loving shrubs and trees (Guelder rose, Dogwood, Willow, Alder Buckthorn

			and Elder). Allowing ponds to naturally colonise whilst managing invasive species. Maintain swale vegetation with light grazing or annual cutting. Monitor for erosion. Ponds: maintain shallow margins and varied vegetation for amphibians, birds, and insects, Prevent nutrient build up, and desilt when required. Maintain Inlets and overflow.
Irrigation Pond Lower Field	IP1	0.0057	Irrigation pond: Establish and maintain grass cover on banks to stabilise soil and prevent erosion, remove any woody plants that may cause failure. Manage surface weeds creating clear areas for pump access. Introduce oxygenating plants such as Hornwort and Water Crowfoot, native reeds and rushes at water's edge for filtration and stabilisation. Maintain Inlets and overflow. Monitor and limit nutrient inflow (fertilisers, manure, slurry) to prevent algal blooms. Periodically test pH to maintain irrigation systems.
Orchard Trees Orchard Field	OT	0.0732	Planted 2025. Update and maintain tree guards and stakes. Mulch annually and water during dry spells as trees establish. Prune as recommended. Understory of guilds of perennials including pollinators to be established between orchard trees for annual cropping, forage and soil health.

Sweet Chestnut Coppice Orchard +Upper Fields	SCC1	0.0387	Planted 2025.Trees to be mulched biannually and guards inspected until established (3-5 years). Coppice to be managed on a 15/20 year cycle. Increase stocking of stand in year 2 when more trees become available.
	SCC2	0.0410	
Aspen Coppice Upper Field	AC	0.0321	Planted 2025.Trees to be mulched bi annually and guards inspected until established (3-5 years). Coppice to be managed on a 15/20 year cycle. Staggered for sustainable yield and biodiversity benefits. Monitor and evaluate success in current location
Hedgerow/Shelterbelt Orchard Field	HR1	0.1483	Planted 2024/25. Trees to be inspected and maintained until established. Action taken as required to control weeds and pests. Existing boundary fences to be inspected annually and repaired if required. New hedgerow and shelter belts fenced in to create a 4m wildlife corridor and protection from grazing animals.
Copse	CP	0.2686 (inc ponds)	Ring-barked trees to be felled, pollarded or coppiced allow existing oak and ash trees to establish. Preservation of some standing and fallen deadwood for habitat and biodiversity gain. Brush and log piles to be established in low traffic areas to create habitat. Gradual removal of invasive bamboo (adjacent to EP2). The area contains existing ponds and a new green woodwork area.

Existing Ponds Copse	EP1	0.0125	Inspect and clear Inlets and outlets. Clear of silt and reseal (using sodium bentonite). Establishing a multi depth profile to support marginal plants and year round water. Allow for natural recolonisation of wetland plants and supplement if required. Selective and gradual coppicing, pollarding or felling of trees around the pond margin (east and south) to encourage oxygen production and support aquatic life. Fence to limit impact of grazing animals. Apply silt to veg growing beds and other areas of planting (checking for invasives first). Monitor and maintain.
	EP2	0.0130	
Tree Alleys and Swales Upper Field	TA/S	0.0639	Contour swales created and planted with tree fodder (willow and hazel), fruit and nut trees and an understory of perennial crops for forage, harvesting, pollination and soil health. Planting to suit swale/berm profile conditions. Coppiced and maintained to limit overall height >2m. Species to be confirmed prior construction.
Swales and Irrigation Pond Upper Field	S	0.0111	Contour swales created and planted with moisture loving perennial shrubs and plants to provide stability, microclimate and other stacking functions including filtration. Maintain swale berm vegetation and height >1.5 m to prevent over shading of garden and dwelling. Monitor and address nutrient build up. Remove silt build up as required and apply organic
	IP2		

			matter to adjacent veg beds as soil improvement. Irrigation pond: Establish and maintain grass cover on banks to stabilise soil and prevent erosion, remove any woody plants that may cause failure. Manage surface weeds creating clear areas for pump access. Introduce oxygenating plants such as Hornwort and Water Crowfoot and native reeds and rushes at waters edge for filtration and stabilisation. Maintain Inlets and overflow. Monitor and limit nutrient inflow (fertilisers, manure, slurry) to prevent algal blooms. Periodically test pH to maintain irrigation systems.
Hedgerow/Shelterbelt Upper Field	HR2	0.06321	Planted 2024/25. Trees to be inspected and maintained until established. Action taken as required to control weeds and pests. Existing boundary fences to be inspected annually and repaired if required. New hedgerow and shelter belts fenced in to create a 4m wildlife corridor and protection from grazing animals.
Wildlife Corridor Upper Field	WC	0.4885	Removal of conifer trees. Naturally allow area to regenerate. Manage canopy height through staggered coppicing of willow to prevent over-shading of pasture and maintain optimal habitat for small mammals, butterflies and birds. Protect and encourage growth of interspersed oak standards.

			Protect Monitor and repair fencing when required.
Existing Hedgerow/Margins	EH/M	0.3639	Inspect yearly. Identify and preserve habitats/features. Where applicable coppice on rotation to maintain varied structure/health and limit ground impact. Protect and maintain ground cover. Create a deeper edge with existing pastures by sowing wild flowers and introducing tussocky grasses.
Other features			
SuDs Detention Basins including proposed	DTB	0.0436	Sowed with grassland/wet meadow seed Osier Willow planted to edges. Inspect for debris every 3 months (or after significant rainfall event), mowing and coppicing to prevent overgrowth of dominant species. Reseed if required. Inlets and outlets to be checked for blockages. Flow controls to be inspected monthly and cleared when required.
Track Hardstanding	T HS	0.1845	Trackway surface to be monitored and maintained to support effective use and drainage, including the clearing of open cross drains and removal of weeds and plants from roadside drain.
Total land managed		5.865	

Table 11 summary of the land management across the farm

7.2. Habitat and Biodiversity

Current Ecology

- 7.2.1 The Bryn Cynefin Permaculture Farm PEA report has identified the habitats in the site area and immediately adjacent to the site. These are as follows.

- 7.2.2 Habitats within the OPD site:
- Semi-improved neutral grassland
 - A small recently planted copse woodland (20 years old) of low quality
- 7.2.3 Habitats close to the OPD site:
- Four lengths of reasonably good hedgerow.
 - Three lengths of recently planted hedgerow.
 - The scrub strip to the south boundary of the upper field
- 7.2.4 Habitats on the remaining land in our ownership:
- Semi-improved neutral grassland
 - Ancient Semi Natural Woodland designated as a SINC.
- 7.2.5 Of the grassland areas the Lower Field, had areas of semi-improved grassland which were found to be of significant value due to its wet rush and dry grassland characteristics which are interspersed with winter spring lines that support a diversity of plant species (see PEA *appendix B*). Historical maps show this field was open land when surrounding land was still covered by woodland over 100 years ago. The remaining grassland (Upper and Orchard Fields) are a more recent creation - created through the clearing of Ancient woodland (approximately 70 years ago). As semi-improved grassland that has been more heavily grazed these fields harbour less plant diversity making them of little ecological significance at present although there is significant scope to improve the situation by managing grazing or mowing practices, seeding new plant species, planting trees and establishing a multi species rotational grazing system in these areas.
- 7.2.6 The small copse adjacent to the SE corner of the Orchard Field consists predominantly of alder, grey willow and oak (most of which have been ring barked) as well as some conifers including sitka spruce. The two ponds in the copse which are fed by a winter spring are heavily silted and shaded out by surrounding trees making them an unfavourable habitat for wildlife and plant diversity. The ponds are also surrounded by bamboo, which as an invasive species needs to be brought under control, in line with the recommendations in the PEA .
- 7.2.7 The Ancient Semi - natural woodland along the North-West boundary is classified as a Site of Importance for Nature Conservation (SINC) and represents a valuable habitat for a multitude of plant and animal species as well as having significant as the remnants of what was once a larger woodland connecting the surrounding landscape less than 100 years ago. Having experienced a clearing event at some point in the last century areas of the woodland have since regenerated with pioneer species such as Alder, Willow and Birch taking root in the moist soils around existing hazel stools that have previously been coppiced. At the perimeter of the woodland stand significantly older broadleaf specimens such as Oak, Beech, Lyme and Ash. Unfortunately, due to Ash dieback some of the larger trees required felling in 2024 in order to ensure roadside safety along the A465. We are currently developing a management plan for the woodland to establish existing coppice stools with the support of our neighbour, a forestry specialist who works directly creating management plans for the Forestry Commission.

Priority Species on the Land

- 7.2.8 The PEA identified the following
- Bat surveys identified relatively low level use by Common and Soprano Pipistrelle and Noctule bats which are more widespread, less sensitive species.

- Red kite

7.2.9 No other priority species were noted in the PEA, but are known to be recorded in the surrounding area (table 2 of the PEA) and we will take care to manage the site to allow the flow of wildlife through it and to provide habitat suitable for these species.

Invasive Species on the Site

7.2.10 The surveys have shown there is invasive bamboo within the small copse and we will manage these areas to remove it over time.

Proposed Ecology Enhancements

7.2.11 The PEA recommends:

- Various mitigation measures to be adopted during the clearance and construction phase of the project. We will comply with all of these.
- Design of the house and associated use of the site to minimise disturbance including light spill, onto habitats, through use of low level lighting, sunken window profiles, facing windows away from woodland, scrub and ponds and providing a 10m dark buffer to these.
- 5 each of bird and bat boxes constructed of long-term durable materials, such as Elisa Wood Concrete Bat Box and Vivaro Pro 32mm Woodstone Bird Box, are to be installed on the south-east elevation of mature trees on the woodland / treeline edges.
- Grassland seed for enhancement planting to be established naturally or brought in as seed hay crop from adjacent SINC site if possible.

We will implement all of these mitigation and enhancement measures.

7.2.12 The PEA, pages 40 and 41, details how our proposals to enhance the wider site's wildlife will have a demonstrable significant net ecological benefit, enhancing biodiversity and habitats due to the following measures.

- Pond / wet scrape features to be created in the central / southern half of the north field and within the southern wildlife corridor area.
- Existing ponds within the wooded copse will be restored through thinning of over crowded trees to allow in additional light encouraging natural regeneration of the woodland floor. Ponds will be desilted and given a more natural profile to allow enhanced access and egress to wildlife
- Gradual thinning of trees for safety works of ash trees and to enhance and restore native woodland (30% removal over 15 years) retaining connectivity of woodland habitat and retaining standing deadwood features. Natural regeneration to be encouraged within woodland, through opening up parts of the canopy and removing fallen timber and brash from most of the cleared areas.
- Bamboo shall be gradually removed over the first 5 years in line with the Land Management Plan and Strategy.
- Removal of conifers and replanting with native trees where necessary, over timescales to make productive use of trees
- Veteranising of selected mature trees to create crevices and cracks that are likely to attract bats, nesting birds and other wildlife.
- Retaining piles of deadwood in localised woodland / clearing edge areas.

- Retaining open boundary gaps for wildlife movement, except in areas needing crop protection.
- Agricultural management – times and stocking density of livestock, removal of hay cuttings, avoiding accumulation of dung and feed remains on grassland habitats to be managed in line with Natural England / Natural Resources Wales stocking densities for conservation grassland sites. Further details are laid out in the PEA.

7.3. Landscape Character

- 7.3.1 The whole site lies within National Landscape Character Area 31– Central Monmouthshire.
- 7.3.2 A full Landscape and Visual Impact Assessment can be found in Appendix C of this MP along with an assessment of key viewpoints. It outlines in detail the key characteristics of the surrounding national and local landscape characters and the impact of the proposed development on the local landscape character. The visual impact is assessed using a Zone of Theoretical Visibility (ZTV) model, cross referencing the viewshed with areas where visual receptors might be present (i.e. residential roads, footpaths, etc).
- 7.3.3 The dwelling will be located on naturally flat, free-draining ground higher up the site in the bottom of the Upper Field, avoiding boggy areas and ecologically sensitive habitats. This placement will ensure optimal solar exposure while being sheltered from cold north easterly winds and screened from views within the landscape. This will limit the impact the development will have on the local landscape character and its visual impact. The dwelling has been designed to be ‘compact’ and has been kept to a single story to further mitigate landscape impact. The greenhouse building has been sited close to the dwelling.
- 7.3.4 The ancillary guest cabin is sited in the east side of the Orchard Field where it is screened from views. It is a small low structure.
- 7.3.5 The accessible green woodworking area is sited within the young copse adjacent to the southeast corner of Orchard Field.
- 7.3.6 The LVIA demonstrates that the development:
- Can be satisfactorily assimilated into the landscape
 - Has no unacceptable adverse impact on landscape, historic / cultural or geological heritage, biodiversity or local amenity value.
 - Does not cause a significant visual intrusion
 - Does not cause significant adverse change in the character of the built or natural landscape
 - Is sensitively and sympathetically sited within the landscape
 - Harmonises with, or enhances the landform and landscape
 - is of a form, bulk, size, layout and scale that respects the character of the surrounding countryside.
 - Does not result in the loss of traditional features patterns, structures and layout of settlements and landscapes of both the built and natural environment
- 7.3.7 The land management proposals across the site strengthen important landscape features, reconnect habitats and re-introduce features such as traditional orchards.

7.4. Heritage Assets and Cultural Heritage

- 7.4.1 There are no heritage/cultural assets located on the site. However, if any were discovered, they would be conserved and enhanced through appropriate management.
- 7.4.2 The proposals will maintain the historic field pattern and the culture of small scale farms.
- 7.4.3 The baseline section notes the heritage assets within 2 km of the site.

8. Our Low Impact

- 8.1.1 This section lays out how our proposals will reduce our impacts from all aspects of living on the site.

8.2. Energy and Water

- 8.2.1 See paragraphs 3.62-3.63 of the OPD Guidance document.

Energy

- 8.2.2 The zero carbon building energy report found in Appendix-F of this MP 'Energy use in Buildings Report' has been prepared by Waxwing Energy to address the requirements of the OPD Guidance.

- 8.2.3 The results of the report are summarised below:

Main OPD dwelling

- The space heating demand of the building will be 33 kWh/m²/annum
- The thermal performance of the elements in all cases exceeds the limits and approaches or better the notional values of Part L.
- Total wood needs for space heating, hot water and cooking is 5500kWh which equates to under 4m³ of close stacked dry timber or less than 2 tons.
- All energy for this building is provided from renewable resources from the site. (Wood, solar thermal and PV+battery)
- Since there is good provision for wood harvesting now and in the future on the site this dwelling can be considered zero carbon.

Ancillary Guest Cabin

- 8.2.4 NB The building will only be used intermittently for visiting family and friends. It will only be used occasionally throughout the year, and less so in the winter months.
- This is a very small dwelling with a floor area under 14m²
 - The space heating demand of the building will be 117kWh/m². However, total annual (with year round occupancy) is just 1600kWh
 - Wood needs, were the property used year round would be about 2m³ of dry stacked timber. Or about 0.7 tonnes.
 - Since there is good provision for wood harvesting now and in the future on the site this dwelling can be considered zero carbon.
 - All energy for this building is provided from renewable resources from the site. (Wood and PV) except small quantities of gas for cooking (if required) which is acceptable in the OPD guidance.

Heating and Hot Water

- 8.2.5 We have carefully considered the need for energy and will reduce the demand as much as possible. A high efficiency woodburning range cooker with back boiler will be used to meet the space heating and hot water demand during colder months where heating is required. A Solar thermal array will also provide hot water. During the summer months where space

heating is not required, an induction hob will be used to meet cooking needs and any extra energy generated from PV panels not able to be stored in the battery can be dumped into the hot water immersion heater.

- 8.2.6 Wood fuel will come from firewood grown on site. There are large amounts of hedgerow and woodland management for the short-med term and in the longer term short rotation coppice. The calculations in the Energy Report show that heating and hot water for both buildings will require $5,500 + 1,600 = 7,100$ kWh per year, including hot water that will be provided by the surplus from the solar PV. The balance of the energy can be provided from the land from the 0.1590 of willow coppice and from our other woodland and hedge management until the willow coppice is established.
- 8.2.7 To provide 7,100 kWh requires around 2,025 kg of 20% dry wood⁴ based upon various hardwood species. We already have:
- 1.2 ha (3 acres) of deciduous broadleaved woodland,
 - 0.40 ha of coniferous woodland
 - 411 m of hedgerows in reasonable condition
- 8.2.8 Timber requires to be harvested from all these sources as part of their management.
- 8.2.9 In addition, we are planting:
- 1,166 m² of willow along the swales which will provide short rotation coppice wood
 - 1,118 m² of chestnut and aspen coppice
 - Total area of coppice = 0.228ha
- 8.2.10 $7,100 \text{ MWh} / 46 \text{ MWh/annum/ha}^5$ yield from SRC Willow = 0.154ha SRC willow required. 0.228 ha exceeds this amount.
- 8.2.11 There is significantly more annual yield from our standing wood than our requirement for the next ten years and the SRC to be introduced ensures a sustainable source of wood fuel into the future.
- 8.2.12 The barns and other ancillary buildings are unheated.

8.3. Domestic Electrical Energy

Main OPD Dwelling

- 8.3.1 See table 12 below for electrical energy demand calculations
- The demand is reduced during the winter as we will be using the wood fuelled range for heating and cooking.
 - Ebike Transport requirements are included.
 - We will not have an EV car.
 - It is very unlikely that all appliances in the table will be on simultaneously.
 - Our experience of living off grid shows us that we adjust our needs to suit supply.

OPD household

⁴ https://cdn.forestresearch.gov.uk/2022/02/fr_bec_wood_as_fuel_technical_supplement_2010-1.pdf

⁵ Forestresearch.gov.uk indicate that SRC willow yields 46 MWh per ha per year (46,000kWh)

Peak daily energy demand

	Power	Summer demand		Winter demand	
Item	W	Hours	kWh	Hours	kWh
LED Lighting (total 60w)	65	4	0.26	10	0.65
Extrator Fans	20	1.5	0.03	1	0.02
Air Fryer	1500	0.5	0.75	0.5	0.75
Microwave	800	0.2	0.16	0.2	0.16
Slow Cooker	150	8	1.20		0.00
Induction Hob small 1.2 kW	1200	0.5	0.60	0.5	0.60
Washing Machine			0.86		0.86
Fridge			1.09		1.09
Solar Thermal C/Pump	30	12	0.36	6	0.18
Water Pump	54	0.25	0.01	0.35	0.02
UV Bulb	25	24	0.60	24	0.60
Laptop	60	4	0.24	6	0.36
Tool Charging	60	1	0.06	1	0.06
Electric Bike Charging	84	0.85	0.07	0.85	0.07
Food Processor	850	0.01	0.01	0.01	0.01
Phone/device charging x1	10	3	0.03	3	0.03
Head Torch	5	1	0.01	1	0.01
Bike Lights	10	0.15	0.00	0.15	0.00
Vacuum	420	0.05	0.02	0.05	0.02
Daily Total			6.36		5.49

Table 12 Domestic electricity demand

8.3.2 In addition to the proposed OPD house we hope to retain the ancillary cabin which has been our temporary home whilst we build the other buildings and infrastructure on the site. It will be used as guest accommodation when required. NB not as a holiday let.

8.3.3 Its energy demand is laid out in Table 13 below.

Ancillary Cabin

Peak daily energy demand

	Power	Summer demand		Winter demand	
Item	W	Hours	kWh	Hours	kWh
LED Lighting (toatal 60w)	60	4	0.24	10	0.60
Extrator Fans	20	1	0.02	1	0.02
Water Pump	54	0.25	0.01	0.35	0.02
UV Bulb	25	24	0.60	24	0.60
Fridge	15.8	24	0.36	24	0.36
Laptop	60	4	0.24	6	0.36
Tool Charging	60	1	0.06	1	0.06
Electric Bike	84	0.85	0.07	0.85	0.07
Blender	600	0.01	0.01	0.01	0.01

Phone/Device Charging	10	3	0.03	3	0.03
Head Torch	5	1	0.01	1	0.01
Bike Lights	10	0.15	0.00	0.15	0.00
Daily Total			1.65		2.13

Table 13 Ancillary cabin electrical demand

Business Electrical Energy

- 8.3.4 The OPD enterprise will utilise energy from separate systems in both barns already approved. The estimate of the energy demand for the tools in the woodworking workshop in barn 1 is shown in Table 14 below.

Workshop in Barn 1 extension

Energy demand of tools

	Power	Summer demand		Winter demand	
Item	W	Hours	kWh	Hours	kWh
Lighting	100	4	0.40	6	0.60
Battery Charging	60	3	0.18	3	0.18
Pillar Drill	650	0.3	0.20	0.35	0.20
Band Saw	800	0.4	0.32	0.4	0.32
Table saw	1800	1.5	2.70	1.5	2.70
Chop Saw	1675	0.5	0.84	0.5	0.84
Planner/Thicknesser	1100	1	1.10	1	1.10
Lathe	550	1	0.55	1	0.55
Extractor	300	2.5	0.75	2.5	0.75
240V Tools	600	1.5	0.90	3	0.90
Total			7.93		8.13

Table 14 Enterprise tool electricity demand Barn 1

- 8.3.5 Whilst the lighting, the battery charger and one or two larger tools and the extractor might be turned on simultaneously it is very unlikely that more than one of the tools and the extractor will actually be running at any one time. There is only one person available to be using them. In reality the workshop is only used for woodworking for limited periods of time and these times would be dictated by the availability of power.
- 8.3.6 Therefore the estimate of the peak demand for the workshop has been calculated using the lighting, battery charger table saw and extractor, $=0.4+0.18+2.7+0.75=4.04$ kWh (summer) $0.6+0.18+2.7+0.75=4.24$ kWh (winter).
- 8.3.7 The estimate of the peak demand for the processing/ packing area and store in barn 1 is shown in Table 15 below. The power demand for the processing packaging and storage is more consistent than the woodworking.

Processing/Store

Energy demand

	Power	Summer demand		Winter demand	
Item	W	Hours	kWh	Hours	kWh
Commercial Refrigerator		24	1.07	24	1.07
Chest Freezer		24	0.63	24	0.63
Dehydrator	800	3.4	2.72	0	0.00
Ban Marie	600	1	0.60	1	0.60
Extractor Fan	20	2	0.04	2	0.04
Water Pump	54	0.25	0.01	0.25	0.01
UV	25	24	0.60	24	0.60
Total			5.67		2.95

Table 15 Enterprise processing and storage electricity demand Barn 1

- 8.3.8 The energy use detailed in table 15 above includes a dehydrator that would again only be running when energy was available. Hence the peak demand under most circumstances is closer to the 2.95 kWh winter use than the 5.67 kWh summer use.

Meeting the Electrical Energy Need

8.3.9 Dwelling

- Total normal peak electrical demand (Summer) is 6.36 kWh per day
- Total normal peak electrical demand (Winter) is 5.49 kWh per day

8.3.10 Ancillary Cabin

- Total normal peak electrical demand (Summer) is 1.65 kWh per day
- Total normal peak electrical demand (Winter) is 2.13 kWh per day

8.3.11 Business - Workshop and processing and storage (Barn 1)

8.3.12 Total exceptional peak electrical demand (Summer) is $4.04 + 5.67 = 9.71$ kWh per day

8.3.13 Total exceptional peak electrical demand (Winter) is $4.24 + 2.95 = 7.19$ kWh per day

8.3.14 The site is not connected to the electricity grid. Due to the nature of the site, an electrical grid connection would be a vastly expensive undertaking and instead all energy needs will be met off-grid and on site.

8.3.15 Renewable energy for the buildings on the site will come from the following systems:

8.3.16 Dwelling

- 5kWp solar array
- 10.40kWh (4 x 260 Ah Lithium Phosphate) battery system
- 3KW Wind Turbine Generator 3-Blade vertical axis
- SRC woodfuels from the land.

8.3.17 Ancillary Cabin

- 1.2kWp solar array
- 5.40kWh (4 x 260 Ah Lithium Phosphate) battery system

- SRC woodfuels from the land.
- 8.3.18 Workshop and processing and storage (Barn 1)
- 5kWp solar array
 - 10.40kWh (4 x 260 Ah Lithium Phosphate) battery system
- 8.3.19 The performance of the three systems is addressed in Appendix G of this MP which shows a breakdown of estimated average daily solar generation, wind generation and battery performance throughout the year, taking into account when the sun doesn't shine and when the wind blows.
- 8.3.20 The batteries will provide 10.4 kWh – sufficient to run the house for two days with no generation at all. The chances of this occurring are reasonably low as demonstrated by the figures in Appendix G.
- 8.3.21 We have been living off grid for many years and experience shows that If we encounter extreme situations where we can see that we will lack generation capacity we can reduce our use of items to compensate. If it is shown over that time we require additional batteries, we will install more.

8.4. Water

- 8.4.1 Bryn Cynefin currently has at least 1 reliable spring that has displayed consistent provision of water over 2 years, even throughout the recent dry summer of 2025. Coupled with adequate storage it is more than able to meet our needs based upon our current and future predicted use. There are also 2 further un-developed spring sites that will be used to supply water to the site.
- 8.4.2 Rainwater is also currently being harvested from the existing structures, both barn/workshop and cabin.
- 8.4.3 This summer (2025) our whole orchard, sweet chestnut coppice and newly planted hedgerow has continued to thrive despite drought conditions and no excessive additional watering.
- 8.4.4 As our enterprises focus on perennial cropping and seasonal forage items, along with a low stocking rate of animals we aim to minimise the water required onsite in order to work with our currently available water resources, building sustainability and drought resilience into our activities at Bryn Cynefin.
- 8.4.5 All buildings have been designed to maximise water collection and minimise water use with low flow and water efficient fittings.
- 8.4.6 2 irrigation ponds will also be constructed to store as much water as possible during rain events limiting site runoff. Once rainwater tanks are filled water will then be directed into detention basins at various locations onsite, again minimising and buffering rainwater runoff and creating seasonal wetland habitats to benefit the ecology of the site. The water demand of the enterprise and wider site is estimated as:

Domestic Water Requirement

- 8.4.7 Our priority is the minimisation of water use. A very large reduction is achieved by the use of composting rather than flush toilets, requiring no water at all. On average, a 4-person UK household uses 420 litres of water per day, of which one third is used by flushing toilets. Another third is used in baths and showers.

- 8.4.8 At Bryn Cynefin, we will be constantly monitoring the flow of our spring and water levels in our IBCs and irrigation ponds. This will lead to a much more active relationship between usage and resources: for instance, we may choose to take more baths in the autumn and spring when both rainfall and solar heating are readily available. We will be able to directly respond to water levels by adapting our patterns of consumption.
- 8.4.9 The final third of water (in the average household) is used for all other uses: taps, laundry, dishes, etc. Where appliances are used, the most efficient appliances will be chosen. Where activities are done by hand, we will be mindful of the limited water resource and actively reduce usage during times of low water.
- 8.4.10 The total expected household water usage for Bryn Cynefin is conservatively estimated at half the national average for a household of 4, a total of 220 litres per day, though it will certainly, in practice, be lower due to reduced frequency and duration of baths and showers compared with the national average, the exclusive use of compost toilets and the efficient use of water in cooking and washing up, which we have practiced for years as part of our off-grid lifestyle. Currently, we use around 700 litres per week as a family.
- 8.4.11 Domestic gardens (forest garden, vegetable beds) and poultry will be irrigated/watered with harvested rainwater collected in both IBCs and irrigation ponds located nearby. No-dig gardening will reduce irrigation needs, but in very dry spells and in sheltered cropping irrigation remains indispensable. Storage of winter rains will be an integral feature of this system and will necessitate the creation of ponds and the use of multiple storage tanks. This water system will not only sustain productivity and subsistence, it will increase biodiversity and provide the opportunity for micro-climatic management in various regions of the site.
- 8.4.12 The flow rate of the existing spring ranges between 1.5 l/min during the summer (2,160 l/day) and 5 l/min during the winter. With adjustments to the current spring harvesting design this flow can be increased.

Enterprise Water Demand

- 8.4.13 Horticulture in non-covered areas typically needs very little irrigation in the Welsh climate, this, in addition to the presence of water running through areas of the land means that additional watering will only be required for newly planted seedlings in warm weather and during any periods of drought.
- 8.4.14 Horticulture in covered areas (polytunnel) requires full irrigation and rainwater harvesting. In instances when the amount required exceeds the amount collected by rainwater harvesting from the polytunnel roof, the additional water will be provided by rain water catchment from the barn and workshop and from the storage ponds if needed, spring water may also be used for minimal irrigation. Technologies such as self-wicking beds will be used within greenhouse structures to conserve more water and minimise the need for regular surface watering.
- 8.4.15 Outdoor irrigation:
- $250 \text{ m}^2 \text{ of beds} \times 4.5 \text{ mm/day}^6 = 1.13 \text{ m}^3 \text{ per day without rain}$
- 8.4.16 Polytunnel and greenhouse :
- $71 \text{ m}^2 \text{ of beds} \times 4.5 \text{ mm/day} = 0.32 \text{ m}^3 \text{ per day - required irrespective of rainfall}$
 - Total for beds and greenhouse by house = $1.13 + 0.0945 = 1.225 \text{ m}^3$ (1,224 litres) per day

⁶ <https://www.waterirrigation.co.uk/how-to-calculate-drip-line-length-and-run-time>

8.4.17 As detailed above the spring can provide 2,160 l/day consistently throughout the summer. This is considerably more than might be needed for both the house and the domestic veg production.

8.4.18 The house will have 5,000 litres of storage from the roof.

8.4.19 Livestock requirement per day⁷:

10 sheep at 0.003 m³ per head = 0.03m³

3 ducks at 0.0003 m³ per bird = 0.0009 m³

25 chickens at 0.0002 m³ per bird = 0.005 m³

2 cattle at 0.08 m³ per animal = 0.16 m³

Total livestock per day = 0.196 m³ (196 litres) per day

8.4.20 Total water need for domestic use, irrigation and livestock = 220+1,225+196 = 1,641litres per day (1.65 m³ per day). The spring can provide for this.

Rainwater harvesting

8.4.21 The runoff coefficient which allows for the proportion of rainfall which evaporates, leaks or overflows before it reaches the tank. The runoff coefficient value for a pitched roof in the UK is 0.7.

8.4.22 The average filter efficiency is between 0.8 to 0.9. We will use 0.8 to err on the side of caution.

8.4.23 Roof area in m² x run off coefficient x filter efficiency x rainfall in mm = annual yield in litres.

8.4.24 The typical rainfall in our area is shown in Table 12 below (source⁸).

8.4.25 Based on this and allowing for losses from runoff coefficient and filter losses from the house and greenhouse roof we will be able to capture $0.8 \times 0.7 \times 153 \times 0.0428 = 3667$ litres (3.67 m³) in the lowest rainfall month. There is an average of 7.7 days of rain in our driest month April. Our rainwater would provide domestic water for $3.67/0.22 = 16.6$ days consumption, longer than we are likely to need in the event of low rainfall, backed up by the spring.

8.4.26 Water will be collected from the various structures and stored as follows The collection figures are based on annual rainfall of 942 mm per year:

	Roof surface area m ²	Water collection potential (litres per year)	IBC 1000L Tank Storage capacity
House	132	69633	5000ltrs (5)
Domestic Greenhouse	21	11078	2000ltrs (2)
Animal shelters x 2	40	21101	4000ltrs (4)
Lower Barn Inc Compost Toilet	89	46949	4000ltrs (4)
Upper Barn	143	75435	4000ltrs (4)

⁷ https://assets.publishing.service.gov.uk/media/5a7f18fa40f0b62305b850da/LIT_10146.pdf

⁸ [Abergavenny Climate, Weather By Month, Average Temperature \(United Kingdom\) - Weather Spark](#)

Polytunnel	72	37981	4000ltrs (4)
Cabin	37	19518	1000ltrs (1)
GreenW/W Shelter	35	18463	4000ltrs (4)
Total amount	569	300158	28000ltrs (28)

Table 16 Annual rain water harvesting figures

8.4.27 Water for the livestock and irrigation needs of the farm is provided by:

- 28 x 1000 litre IBC Tank storage = 28000ltrs
- Two irrigation ponds
 - Pond 1 in Lower Field - 44m² x 2.5m Depth = 110000ltrs
 - Pond 2 in Upper Field to south of the house 35m² x 2.5m Depth = 87500ltrs

8.4.28 When full we will provide storage for $225.5/1.65 = 136$ days without rain.

8.4.29 Climate change is expected to result in greater variability of the Welsh climate, with the potential for longer periods of drought and more extreme rainfall. The storage systems designed on site will be deliberately over-engineered to build resilience to these possible changes. Sustainable drainage systems have been agreed via our SUDs plan, which will be used to deal with excess rainwater via ponds, contour ditches and tree plantings to return the water to groundwater.

8.4.30 We recognise that surface water drainage in Wales requires a parallel application to the local 'Sustainable Drainage Approval Body'. We already have a SAB approved system which has the capacity to absorb the additional flows from the house and other OPD development. See Appendix H of this MP. An updated SAB application will be initiated when we have secured planning.

8.4.31 Any excess water not used on the site will be stored in the chain of ponds with any exceedance passing through the flow control and into the nearby ditches and hence to the river as per the existing runoff.

8.4.32 Surplus rainwater will be directed to the SUDs ponds once the tanks are filled.

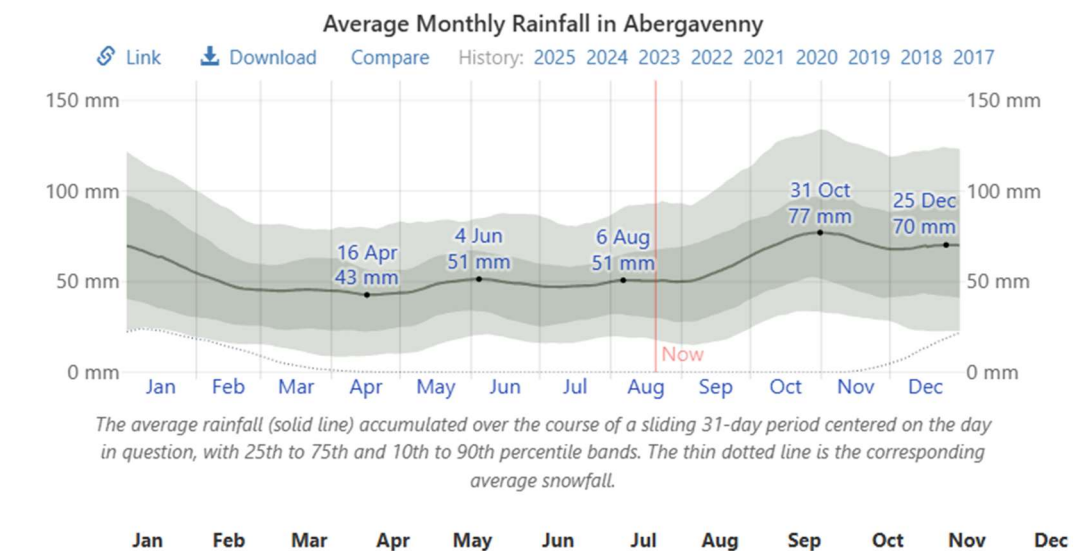


Figure 4 average rainfall

TABLE 17: annual precipitation © weatherSpark.com

8.5. Waste

8.5.1 See paragraphs 3.68-3.78 of the OPD Guidance document.

8.5.2 All wastes will be dealt with in accordance with Environment Agency/ NRW regulations and guidelines.

Grey Water

8.5.3 'Grey water' refers to all wastewater not derived from toilets, i.e., output from sinks, showers, baths and washing machines. The site will produce no 'black water' from toilets (i.e. effluent) because a dry composting system is used rather than water flush toilets. Grease/sediment traps will be installed in both the kitchen and packing barn and allow much of the solids to settle out before reaching the reed bed.

8.5.4 Grey water from the dwelling will then pass through a vertical reed bed filtration system to remove any harmful substances. The clean water discharged from this will receive tertiary treatment and be captured by an attenuation pond in the top of Lower Field which will also receive the overflow from the rainwater harvesting system and lead to the approved SUDs system.

- 8.5.5 The reed bed will be sized in accordance with the recommendation of the good building guide⁹ The first stage reed bed will be a vertical flow gravel reed bed, as shown in figure 5 the minimum size recommended is 15m².

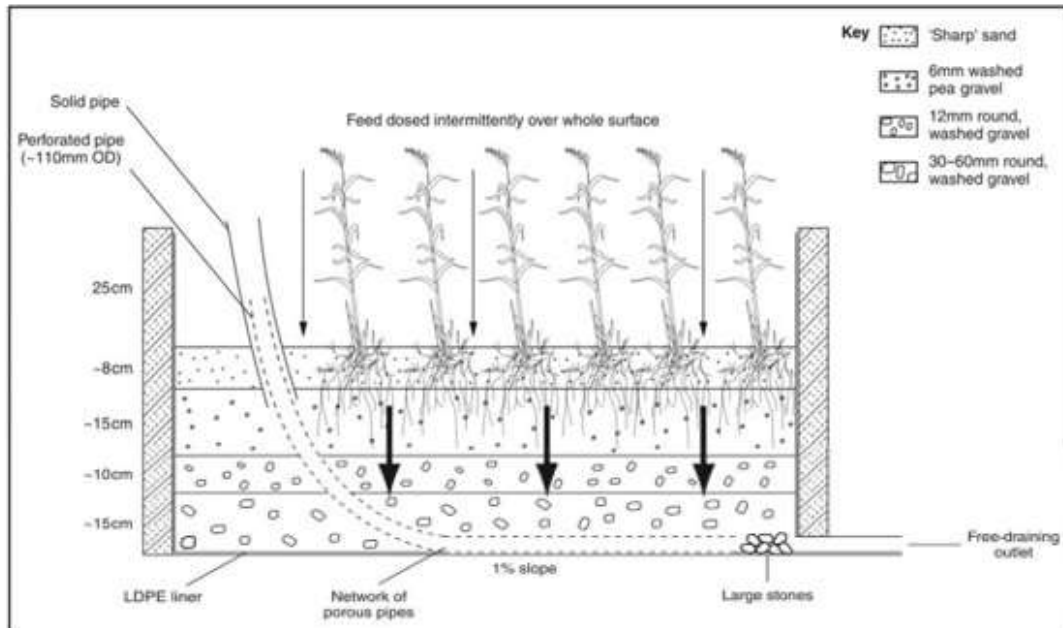


Figure 5 vertical flow reedbed

- 8.5.6 All waste water systems will comply with Natural Resources Wales rules and guidelines.

Toilet and Solid Waste

- 8.5.7 There will be four compost toilets on the site. One in the house, one in the ancillary cabin, one accessible compost toilet close to the workshop and polytunnel and one accessible compost toilet in the green woodworking area in the copse.
- 8.5.8 Urine and faeces will be separated at source. Faeces will have sawdust added and be composted aerobically within a sealed container in situ, avoiding unpleasant odours and methane production. Composting duration will be at least one year to ensure breakdown of all pathogens. The resulting hygienic and highly fertile 'humanure' will be spread around the base of top-fruit (i.e., fruit-trees, not vegetables) and non-food crops.
- 8.5.9 We will build the toilet ourselves, however, we will purchase a urine separator which will allow aerobic decomposition preventing unpleasant odours and methane production. The contents will be stored in suitable sealed containers.
- 8.5.10 Urine will be diluted 12:1 to be used as fertiliser on productive trees/shrubs, with excess discharged to the reed bed system with the grey water.

Inorganic Waste

- 8.5.11 Production of inorganic waste will be reduced as much as possible, and where produced we will aim to re-use items before considering recycling or landfill off site. Materials will include plastic and metal packaging, chemicals, electronic components, broken tools, etc.

⁹ Good Building Guide 42 Part 2 Reed beds: design, construction and maintenance

Reduction at source

- 8.5.12 Meeting the food production requirements of the policy will naturally cause a great reduction in imported packaging. The majority of food not produced on site will be bought from local retailers.

Reuse

- 8.5.13 Where possible, every effort will be made to reuse products to extend their lifespan. Products with bio-based packaging can be diverted into compost/mulch and reused on site.

Recycling

- 8.5.14 Any waste that remains will be collected by the local municipal facilities for recycling or landfill.

Green Waste

- 8.5.15 Garden waste will be composted on-site with animal bedding and bracken to add fertility to annual vegetable beds. Twigs from coppicing will be chipped and either composted or used to mulch paths and around trees/bushes to suppress weed growth. Mulch production is an essential part of reducing weeding work, adding nutrients and water retention.
- 8.5.16 Ash from the stove will be added to the compost as this is an excellent source of lime and potassium. The dwelling and sheds will be clad using wooden panels, when these start to decay making them unsuitable they will be removed, replaced, dried and then burnt for fuel.

Brown Waste

- 8.5.17 Organic waste that cannot be classed as green can all be made use of on site. Paper and cardboard arriving onsite will be composted (sequestering carbon).

Domestic Food Waste / Composting

- 8.5.18 Vegetable off-cuts and chicken bedding are valuable for creating compost. This, plus cooked or processed food will be composted in vermin-proof composting containers and wormery¹⁰ which will convert scraps into nutrient-rich plant food that will be added to the annual vegetable beds annually. The use of no-dig techniques and continuous herbaceous cover (to include green manures over winter) without the use of inorganic fertilisers will reduce the risk of soil over-enrichment or nutrient (e.g., nitrate/phosphate) runoff.

Land Based Business Wastes

- 8.5.19 The animal bedding will be composted and utilised on the land.
- 8.5.20 We will dispose of any animal carcass wastes from poultry and lamb slaughter or deceased animals in accordance with the Animal By-Products (Enforcement) (Wales) Regulations 2014.
- 8.5.21 Wood products
- Sawdust will be used for food/green waste composting and solid waste composting
 - Biochar will be a bi-product - see Biochar in the Land-based activity section
- 8.5.22 Herbal teas
- Organic waste will be composted (see above)

¹⁰ <https://www.growveg.co.uk/guides/worm-composting-how-to-make-a-wormery/>

- Jars will all be glass recyclable, with the option to buy refills in recyclable paper packaging
- 8.5.23 Fermented foods and condiments
- Organic waste will be composted (see above)
 - Jars will all be glass recyclable
 - Salt and vinegar packaging will be recycled
- 8.5.24 Tonics
- Organic waste will be composted (see above)
 - Jars will all be glass recyclable
- 8.5.25 Winter salads
- Green waste/surplus will be composted or fed to chickens, depending on quality
 - Salad will be sold in compostable biodegradable plant-based bags
- 8.5.26 Mushrooms
- Plastic packaging containing mushroom spawn will be recycled
 - Excess wood from felling will either be chipped, made into biochar, used for firewood, wildlife habitats or wood products
 - Imperfect or broken mushrooms will be dried and powdered to create other products or composted
- 8.5.27 Eggs
- All feed comes in compostable/recyclable brown paper sacks
 - Chicken manure and bedding will be used to enrich compost and build healthy soil in growing areas across the site

9. Zero Carbon Buildings

9.1. Re-use of Existing Buildings

- 9.1.1 The site has the following existing buildings which will be reused:
- Cabin (currently temporary dwelling). This is proposed to be retained as ancillary guest accommodation.
 - Barn 1 + extension which is under construction.
 - Barn 2 which is under construction.
 - Polytunnel

9.2. New Buildings Proposed

- 9.2.1 We propose to live in an attractive, low energy, well insulated timber framed cabin. (constructed in compliance with the Caravan Sites Act 1968).
- 9.2.2 The details of the design are shown on drawings numbers:
- BC-P/E110 - residential cabin plans and sections
 - BC-E111 - residential cabin elevations
- 9.2.3 Whilst the buildings are being constructed, we will live in the temporary cabin (caravan act compliant) sited in Orchard Field which is proposed to be retained as ancillary guest accommodation once the dwelling is complete.
- 9.2.4 We confirm that all habitable buildings will comply fully with the building regulations as the regulations apply to them.

Ancillary Buildings

- 9.2.5 We will also build the following new buildings:
- Animal shelters x 2
 - Compost toilets x 2
 - Wood store
 - Greenhouse
 - Green woodwork shelter x 2
 - Wheelchair accessible walkway
 - Geodome deck (to site a geodome on as part of accessible green woodworking craft and teaching area)
- 9.2.6 Details of these buildings/structures are given in the drawings
- 9.2.7 All the ancillary buildings are efficient designs incorporating materials with minimum embodied energy to perform their function whilst providing functional spaces.

Zero carbon in construction

- 9.2.8 The cabin will meet the definition of a caravan and can be re-sited if the project fails. The structure will be mounted above the ground using ground screw foundations which are removable and minimise the materials in construction.
- 9.2.9 The vast majority of the dwelling construction will be carried out by hand by us with minimal reliance on machinery and equipment. We will have support from friends, family and members of the local community who have experience in construction. This will reduce the carbon impacts of construction.
- 9.2.10 We have specified natural materials with low embodied energy as follows:
- Locally sourced timber cladding
 - FSC certified treated softwood timbers (internal and external walls)
 - FSC certified timber I beams
 - FSC certified OSB boarding
 - Warmcell blown cellulose insulation (made from recycled paper)
 - Wood fibre insulation board
 - Metal roof sheets (reclaimed if possible)
 - Double glazed windows and doors (reclaimed if possible)
- 9.2.11 It is recognised that a building that is literally zero carbon in construction is not possible to achieve. We have considered and reduced the energy embodied within the materials proposed to be used for our building as laid out in the Code for Sustainable Homes materials assessment report in Appendix I of this MP
- 9.2.12 As stated in the OPD Guidance the dwelling must comply with category three of the code for sustainable homes. There are five elements from this guidance that are applicable to OPDs:
- Roof
 - Internal walls
 - External walls
 - Floors
 - Windows
- 9.2.13 At least four of these must have a rating of at least A. Below we have demonstrated how all of these elements exceed rating A.

Roof

- 9.2.14 The roof will be constructed in a mono-pitch, warm deck format. The construction will be:
- Metal Roof Sheets
 - 25x50 timber batts FSC
 - Breather Membrane
 - 300mm Timber I-Beams FSC
 - Warmcell Insulation
 - 11mm OSB/Vapour Control

- 25x50 Horizontal Batts FSC
- Wall Finish - 12mm Hardwood Ply or Sovalit Plus Wood Wool board with Clay/Earthen Plaster

9.2.15 The report shows this rated A +

Internal Walls

9.2.16 The internal walls will be 'framed partitions. The construction will be:

- 12mm OSB3
- 97mm treated timber stud (reclaimed if possible)
- Insulation (rockwool)
- 12mm OSB3

9.2.17 The report shows this rated A +

9.2.18 We will improve this rating by utilising reclaimed wood where possible

External Walls

- 20 mm Douglas Fir cladding (locally sourced and milled)
- 25x50 Horizontal Batts FSC
- Breather Membrane
- Panelvent DWD Structural Vapour Permeable Sheathing Board 12mm
- 230mm cavity wall using Larson Trusses (made from twin 3x2 timbers FSC and 11mm OSB FSC gussets (off cuts from previous build)
- Warmcell Insulation
- 11mm OSB Internal sheathing
- 25x50 Batts FSC
- Wall Finish - 11mm OSB FSC - Water based paint or Sovalit Plus Wood Wool board with Clay/Earthen Plaster

9.2.19 The report shows this rated A +

9.2.20 We will improve this rating by utilising reclaimed wood where possible

Floors

9.2.21 Suspended timber floor. The construction will be:

- 18mm OSB3 flooring
- 300 x 63 timber I-Joists @ 400 c/c
- With 300 mm full fill warmcell cellulose insulation (or equivalent)
- 11mm OSB3

9.2.22 The report shows this rated A +

Windows

9.2.23 The windows we intend to use are rated as A+, however we may deviate from this if we are able to source good quality reclaimed or 'mis-fits' double-glazed windows which would lower the embodied energy and cost.

Footings

- 9.2.24 We will not require concrete, aggregate or a sand blinding. The building will be supported on screw piles.

Sourcing of materials

- 9.2.25 We will source materials from as close to the site as possible. Where possible we will seek to utilise reclaimed and surplus materials, including window units and doors and roofing that have been miss-sized for other buildings. If possible we will extract and mill larch from our own woodland for use as cladding.

Zero Carbon in Use

- 9.2.26 The zero carbon building energy report Appendix F of this MP 'Energy use in buildings for OPD application at Bryn Cynefin' has been prepared by Waxwing Energy to address the requirements of the OPD Guidance.
- 9.2.27 The results of the report for the OPD dwelling house are summarised below:
- The thermal performance of the elements in all cases exceeds the limits and approaches or betters the notional values of Part L
 - Thermal bridging and airtightness are assumed to be better than average due to previous experience of the owner/builder in building low energy dwellings.
 - **Space heat demand is 33 kWh/m²** or a total of under 3000kWh a year. This is beyond even standards such as the AECB new build standard.
 - Based on previous hot water demand which is known via metered water use we have assumed 1000kWh a year for hot water conservatively.
 - 50% of this is assumed provided by solar thermal
 - Therefore total wood needs for space heat, hot water and cooking is 5500kWh
 - Since there is good provision for wood harvesting now and in the future on the site this **dwelling can be considered zero carbon.**
- 9.2.28 We comply with the zero carbon in use requirement of the Guidance. All energy used will be from renewable sources from the site.
- 9.2.29 The results of the report for the ancillary guest cabin are summarised below:
- Very small dwelling floor area under 14m²
 - Since the property is so small and heat loss is therefore very low insulation levels are proportional.
 - Peak heat load is 1.1kW at coldest times. The smallest wood burner would greatly exceed this.
 - Water and cooking are provided by bottled gas with an induction hob and slow cooker used in summer powered via PV.
 - Assuming similar heating pattern as OPD dwelling Space heat demand/m² is high at 117kWh/m². However, total annual (with year round occupancy which will not occur) is just 1600kWh
 - Gas use for hot water and cooking equates to 1x 47kg bottle of Propane per annum (again full occupancy).
 - All appliances are provided for with 800W of solar panels and a battery storage (as has been the case thus far).

- Wood needs were the property used year round would be about 2m3 of dry stacked timber. Or about 0.7 tonnes.
 - This can be provided amply by wood currently growing and to be grown in future on site.
- 9.2.30 The cabin will only be utilised for guests visiting the site. This is anticipated to happen for approximately eight weeks of the year. Hence actual energy use will be small and all energy needs can be provided for by renewable resources on the site, except for small amounts of gas for cooking in summer which is allowed by the policy

9.3. Removal/Exit Strategy of Buildings

- 9.3.1 Should it be necessitated, the proposed buildings are capable of being removed and the site will be restored to its previous and improved condition.
- 9.3.2 We would seek to retain the two accessible compost toilets as they would be required for welfare on the site ancillary to agriculture if we were not resident. The greenhouse could be retained for agricultural use, with the agreement of the LPA .
- 9.3.3 The structures in the accessible green woodworking area are simple open sided frames, the geodome or the timber walkway and can be easily dismantled and removed.
- 9.3.4 The dwelling building and the ancillary cabin can both be dismantled in order to remove from the land and the materials reclaimed as follows:
- 9.3.5 Reuse of all reusable materials:
- Fixtures and fittings can be removed from site and reused, including windows and doors, burners, white goods and sanitary goods.
 - Good quality structural timber can be reused in other buildings
 - Other timber such as floorboards, cladding etc can be reused for the same purpose
 - Steel roofing can be reused
 - PV system and batteries can be removed
 - The blown insulation can be removed into dumpy bags and removed from site
- 9.3.6 Disposal on site via composting:
- Composting of untreated wood following removal of the small quantity of nonbiodegradable materials (glass windows and metal items)
- 9.3.7 Disposal off site:
- Small quantities of materials that are not suited for on-site disposal or re-use, such as membranes will be removed from the site to specialist recycling facilities or otherwise disposed of via municipal waste handling resources.
- 9.3.8 The full exit strategy proposal can be found in Section 13.

10. Community Impact Assessment

‘The actions we take in the next ten years, to stop ecosystems collapse, to recover and regenerate nature and to restore people’s health and wellbeing are now critical.’ – Food, Farming and Countryside Commission

Introduction

- 10.1.1 Bryn Cynefin has been designed to be fully embedded in its local context, with a strong emphasis on community involvement, ecological responsibility, and cultural resilience. It is not just a self-sufficiency project, but an interdependency project — building reciprocal relationships between local people, the local economy, and our local eco systems. The project aligns with the Seven Wellbeing Goals for Wales and directly responds to the urgent need for ecological restoration and community cohesion identified in TAN 6.

Identification of Potential Impacts

- 10.1.2 Positive impacts include: strengthening local food supply, community building, partnerships, and education & research.
- 10.1.3 Potential negatives include: traffic during occasional events, use of shared driveway, and possible competition with local producers.
- 10.1.4 Mitigation measures: limit ticketed community events, any workshops will be capped at 14 attendees, larger community events at 30, we have 12 on-site parking spaces, car-sharing and bus-schedule alignment, ongoing neighbour consultation, and clear product differentiation.

10.2. Social Impacts

- 10.2.1 We have lived in the area since 2017, with our children attending local schools and our family actively engaged in community life. In a community questionnaire, 92% of respondents agreed that Bryn Cynefin would benefit the local community. Workshops and events were especially valued, with strong support across a wide range of activities.
- 10.2.2 Neighbours
- 10.2.3 We have seen our project as part of the local community from the start and have been keen to share our ideas and vision for Bryn Cynefin.
- 10.2.4 We have engaged with all of our neighbours, and have contacted some local councillors and community representatives to explain our plans including:
- Councillor David Jones
 - Councillor Chloe Masefield, Sustainable Food Partnership co-ordinator
 - Catherine Fooks our local MP.
- 10.2.5 We have maintained open, positive relationships with all neighbours. These relationships provide practical support and collaboration, while also acting as ongoing consultation and accountability. Neighbour support is consistent with our community questionnaire showing 92% positive backing.

Community Groups and Initiatives

- 10.2.6 We try to attend as many community events as possible, alongside supporting the work of groups and initiatives such as Abergavenny Town of Sanctuary, Abergavenny Women’s Network, Folks Around Abergavenny, Abergavenny Food Festival and Pride Abergavenny. We are also building links with Black Mountains College. By attending local events such as carol singing, exercise classes, Fayres, farm open days, produce markets, choir concerts, community events, and skills workshops we meet local people, make friends and continue to deepen connections within the local community.

- 10.2.7 Our own initiatives include a childcare collective of 40+ families, men's and women's support circles since 2017, and inclusive skill-sharing workshops (mushroom inoculation, herbal foraging, creativity and nature connection). Feedback shows these are well received, fostering learning and connection.
- 10.2.8 We collaborate with local growers and networks (OurFood1200, CSA Network, Landworkers' Alliance, Black Mountains College, Hay-on-Wye Farming Cluster), sharing knowledge and exchanging work. We are in a positive relationship with the local farming community through social, local and professional relationships.
- 10.2.9 The children's school is embedded in the centre of a farming community, the school has a strong family ethos, bringing parents together frequently.

Access to site for the wider community

- 10.2.10 We will hold occasional, locally advertised, ticketed Open Days and Work Days where the general public is welcome to come on to the land, see what we're doing and get involved. These events will be free, but ticketed - in order to limit and control numbers. People will be invited through local networks, such as Friends of The Earth or Stump Up For Trees, other local groups and our CSA members. These will be themed as seasonal events, such as harvest festival celebrations. People may also be invited onto the site for experience of low impact building or regenerative farming and horticulture - this would be by pre-arrangement only. Outside of these times we would not permit 'drop-in' visitors.
- 10.2.11 In time, we would like to make part of the site available to share resources with the local community. For example making apple pressing equipment and craft facilities or the workshop available for people to come and use, by arrangement.

Positive community impact:

- Opening up more land for local people to access than is currently available.
- Access to practical and educational resources and equipment both for children and adults, to learn about low impact development and explore areas of interest relating to this
- Permaculture design, building, farming and how food is grown in Wales using regenerative, no-dig methods.
- Celebration of local food growing and local seasonal events.
- Exemplar of low impact buildings which are zero carbon in construction and use, and which are made of local natural materials.

Mitigated negative impact:

- 10.2.12 As some events could attract additional traffic at certain times, this will be mitigated by:
- Encouraging and rewarding the use of public transport and shared travel.
 - Providing an online bulletin board/whatsapp group to promote lift-sharing.
 - Scheduling events around the bus timetable
 - Setting clear arrival times with somebody available to manage vehicles arriving.
 - Providing clear signage and instructions to access site safely
 - Communicating timing of events with neighbours
 - Provision of secure bike parking
 - Provision of a suitable number of parking spaces

- Adding extra charge for parking to encourage the use of public and shared transport (with exception of visitors with additional accessibility requirements).

Education

10.2.13 There is a strong demand in the UK for education and experience in low impact building and practical life skills. A particular selling point on our courses will be the opportunity for attendees to visit a working site rather than spending time in a less characterful venue. The green woodwork and outdoor learning space would also be accessible to community groups at low cost.

Positive community impact:

- During setup, experience in low-impact building and regenerative farming infrastructure will be provided for free to volunteers.
- Once up and running, we will provide workshops and training courses in foraging, herbal and mushroom propagation and growing, regenerative land management, sustainable carpentry and construction, green woodwork and off-grid living systems.
- The overall effect on the community is enrichment by the spread of useful skills and experience of One Planet living.
- An ongoing positive impact as visitors leave with examples and inspiration to take into their daily lives, such as energy conservation strategies and organic horticulture skills.
- We would like to work with local schools, colleges and community groups and offer our site as a low-cost location for practical learning and nature therapy, building local connections and support networks
- Those who may not find it easy to learn in the classroom find new ways of educating and expressing themselves. Helps young people gain self-confidence, motivation and good health.

Mitigated negative impact:

- Traffic impacts will be minimised by offering discounts on courses to those who arrive by bike or public transport, and by encouraging lift sharing.
- We will schedule sessions around the bus timetable
- CSA friends (local people) will be given priority
- Where we are over subscribed for courses or volunteers, we will selectively choose those who have the least distance to travel and who will arrive by bike or public transport, or who can share transport with other attendees.
- We will expect groups to arrive in a minibus or similar, rather than individual cars.

Research, information gathering and sharing

10.2.14 One Planet living is of academic interest to science, as are many of the low tech, cutting edge techniques we will employ as part of our Land Management Plan. Aspects could include development of soil fertility, organic crop yields, feasibility of low impact smallholding, biodiversity and the use of biochar. The monitoring aspect of One Planet Development and the annual and 5 yearly review offers a clear opportunity for documentation and research into an area that has traditionally been neglected, yet is

recognised as having great importance for the future of sustainable agriculture. Organisations such as the Centre for Alternative Technology in Machynlleth, the Sustainable Places Research Institute at Cardiff University, the Ecological Land Co-operative, Shift Bristol, The Black Mountains College and the Permaculture Association may be interested in research partnerships or case studies

Positive community impact:

- Contributes to a scientifically robust body of knowledge on low impact living and sustainable agriculture.
- Provides well documented examples of ecologically and economically sustainable small businesses.
- The five year and on-going monitoring will track and demonstrate the improvement in biodiversity and productivity.
- As we are connected into Permaculture and regenerative agricultural networks, we will be able to share the results of this monitoring and demonstrate best practice in sustainable and productive land management.
- We will make our monitoring reports publicly available on our website and via the One Planet Council.

Local groups & learning

- 10.2.15 Our site will be open to groups interested in biodiversity and species monitoring, such as the Monmouthshire Meadows Group, who carried out our Plant Species Survey.

Positive community impact:

- Allowing these groups access to the site for study or experience.
- Working with groups to develop and improve the site further in response to their feedback.

10.3. Economic Impacts

- 10.3.1 Our plans are focused on local sales and services for local individuals and groups
- 10.3.2 We have explored the possibility of building on relationships with local businesses to develop alliances and opportunities for collaboration. For example:
- Veg box schemes
 - Stocking local veg growers at our market stall
 - Selling products that differ from what is already available from local producers
- 10.3.3 Local Business who we have contacted and who we hope will stock our produce are:
- Christine Hope - Longtown Shop
 - Skirrid Garage Shop
 - Natural Weigh
 - Little Green Refills
 - The Walnut Tree restaurant
 - The Bulls Head
 - The Black Bear

- The Angel Bakery
- Other local growers:
 - The Langtons (veg box)
 - Paul's Organic Veg (market stalls)
 - Orchard Acre (CSA)
 - Tir Arwen (CSA)
 - Three Pools (food for events)
- Our food 1200 group members take surplus produce if it is of use to them for their businesses

10.3.4 We have connections with

- Our food 1200
- Hay on Wye farming Cluster
- Monmouthshire food partnership
- Farming connect
- Stump up for trees, a local charity supplied our trees
- Chloe Masefield - Sustainable Food Partnership Coordinator

Positive impact:

- Encouraging collaboration between small local businesses
- Overall our enterprise will increase the economic activity in the local area.

Mitigated negative impact:

- Whilst it is possible that some of our products will compete for market share with other local producers we are looking to supply relatively niche products which we have identified a market for. By working together with other like-minded producers and retailers to grow and develop the market for environmentally conscious, locally produced products we hope to increase the potential for everyone.

10.4. Environmental Impacts

- 10.4.1 Our stewardship includes reforesting the land with native species, managing semi natural ancient woodland, and integrating low-impact mushroom cultivation and permaculture principles. These practices restore biodiversity, improve soil health, and enhance carbon sequestration. By involving the community in hands-on conservation and education, we nurture a shared responsibility for the land.
- 10.4.2 This project is not just about land-based self sufficiency; it's about cultivating resilient businesses, rooted in supportive networks, ecological practices and the provision of shared resources.
- 10.4.3 An assessment of our positive impacts and mitigation of any negative impacts across a number of areas is laid out below.

Positive impact:

- Enhancement of habitats across the land
- Increased opportunities for a wider range of wildlife

- Improved connectivity of ecosystems surrounding the site via the pathways created across our site to allow for the movement of wildlife
- Improvement to poor quality copse and removal of invasive species

Mitigated negative impact:

- Pasture and water management across the land will sequester nutrients before they leave the land.
- Use of electric bikes will reduce carbon impacts
- Low energy accommodation for a family who have lived and worked locally for eight years
- Timing events to match bus timetables – see above, to reduce travel impacts of visitors

11. Transport Assessment and Travel Plan

11.1. Baseline travel information

- 11.1.1 We currently live onsite, Table 17 is based on actual figures adjusted to reflect the changes we propose once the OPD project is established. The traffic generated by the site at the time of application is by Lily's 8 mile bi-weekly commute to work, and a weekly trip into Abergavenny to do shopping and clothes washing.
- 11.1.2 Additional traffic is produced by Pete, undertaking groundworks and building activities on the site.
- 11.1.3 We also have occasional social visits to and from friends and family (1-2xp/m)

Access

- 11.1.4 The access to the site is via an existing concreted driveway from the adjoining highway network on the A465. This access is already used residentially by our neighbours who have a right of access over it. There have been no issues with this and visibility is very good in both directions
- 11.1.5 We propose to use the existing access on the A465, which can be used by bikes, vehicles or people travelling on foot. The visibility splay from the driveway is excellent and falls well within the guidelines for a 60mph road in the UK. The forward visibility splay requirement is generally a 2.4-meter distance from the carriageway edge, with a length of 215 meters in either direction. Guidelines state:
- Vertical plane: The visibility splay must be clear of obstructions between a height of 0.6 and 2.0 m above ground level
 - Horizontal Plane: the 2.4m distance is measured from the edge of the carriageway on either side of the access point
- 11.1.6 Photographs of the access can be seen in the site baseline photographs Appendix D of this MP

11.2. Proximity to Surrounding Settlements and Amenities

Public rights of way through and close to the site

- 11.2.1 There are no rights of way on or directly bordering the site.
- 11.2.2 In theory there is a good network of footpaths and Public Rights of Way (PRoW) in the area, however in practice most of them have been blocked off and are inaccessible. There are no footpaths that provide us with useful connectivity to close by towns and villages

The relationship of the site to our surrounding towns and villages

- 11.2.3 The A465 is a trunk road between Hereford, through Abergavenny to the Valley of Neath, with high frequency traffic (in 2023 36,286 vehicles were estimated to have used the road). It is easily accessed by any size vehicle, bike and public transport. The site is located on a trunk road adjacent to 3 other residences - (a farm house, a barn conversion to the east and a working farm to the west), so deliveries and post can be delivered without needing to detour from main routes.

Nearby Villages

- Pandy 1.2 miles (accessible by bus/onfoot/bike/vehicle)
- Ewyas Harold 5.2 miles (accessible by bus/bike/vehicle)
- Pontrilas 4.7miles (accessible by bus/bike/vehicle)
- Llannvihangel Crucorney 2.6miles (accessible by bus/onfoot/bike/vehicle)
- Longtown 5.7miles (accessible by bike/vehicle)

Nearby Towns

- Abergavenny 8.7miles (accessible by bus/bike/vehicle)

Nearby City

- Hereford 16 miles (accessible by bus/bike/vehicle)

Footpaths

- 11.2.4 There are no footpaths that provide us with useful connectivity to close by towns and villages. Therefore, our active walking happens once we get to the local towns and villages by bus or car.

11.3. Public Transport

Local buses

- 11.3.1 The site is well-served by public transport. There is a regular bus (no. 23) that stops within 50m of the driveway on the same side of the road, (towards Abergavenny), and 150m away on the opposite side of the road (towards Hereford). The Bus runs between Hereford Bus station and Newport, 6 days a week, every hour during peak times, serving Abergavenny, Cwmbran and Pontypool.

Trains

- 11.3.2 The A465 entrance to Abergavenny Train Station is 7.3 miles from Bryn Cynefin along the A465 towards Abergavenny. The station directly serves cities such as Bangor, Cardiff, Manchester and Shrewsbury.
- 11.3.3 There are secure bicycle stands available at the station, with car parking available adjacent to the station and within the town centre municipal car parks. Taxi's are available from the station by advanced booking.

Cycle paths

- 11.3.4 Whilst there is no formal cycle route within the immediate vicinity of the site, there are a number of local/regional cycle routes within a reasonable cycling distance. The A465 is OK for an experienced cyclist to cycle along.

11.4. Our Current Travel Pattern

- 11.4.1 We have two diesel vehicles, a 1.3 city jet Fiat Panda (fuel efficiency 50.2mpg) for general travel and a 4x4 Nissan Navara pickup truck which is vital for Pete's work and for building the site infrastructure, enabling us to transport tools, materials and tow trailers. Our need to travel for food shopping will decrease over time as we become more self-sufficient. When travelling for social events within the area, wherever possible we already car share and would continue to do so.
- 11.4.2 Lily currently travels 16 miles a maximum of twice a week, 10 months a year to work.
- 11.4.3 Both Children get the school bus to school, so there is rarely any need to travel to drop-off or collect the children (7 miles away), except in special circumstances such as a doctor's appointment. This will continue into secondary school - King Henry school also runs a school bus. In addition, the 23 bus has a stop close to King Henry school.
- 11.4.4 In recent years we have travelled 18,240 miles (29348 km) per year. This has reduced since we moved to the land.

11.5. Year 5 Travel Impacts

- Table 17 below shows how our travel patterns will be reduced by Year 5 (when our OPD site is fully established).
- Table 18 shows the projected transport impacts from our enterprise.
- Table 19 shows the projected transport impacts from visitors and guests.

Travel Assessment For Bryn Cynefin

Domestic Travel

Modal split

Reason for trips		Number of trips	Trips total	car trips	Distance s	Mode s	Notes	FF Car	EV Car	Car share	E Bike	Public	Active	CHEC K	Train costs *	Bus costs	Car miles
Commuting	Part time job 42wks/p/a massage in studio Abergavenny	2 days a week, 42 weeks a year	168	151	8	Car & Bike		0.9		0.0	0.1	0.0		1.0			1089
	Performance/workshop facilitation in various venues , varied writing spoken word mindfulness and nature connection	1 day p/m 8 month per year 16 trips a year	16	16	72.25	Car	Exeter 116; 3 x Cardiff 36; 3 x Bristol 44;somerset 93	1.0		0.0		0.0		1.0			1156
School	occasional collection/drop off in special circumstance (both children get the bus) term time only - 38wks p/a	twice a month, 4 for the adult (to and back x2) and 2 for the child per month in term time	60	30	6.5	Car		0.5		0.5				1.0			98
Shopping	Food - Supermarket trip	Once a week. 104 trips a year	104	104	8	Car	Abergavenny	1.0						1.0			832
	Clothes etc.	3 times a year - with child	12	6	14	Car or train	Abergavenny or Cwmbran or Cardiff	0.5				0.5		1.0	£8	£3.30	42
Social	Visiting family	4 times a year each - 2 adults, 2 children	32	32	120	Car	4x 120 miles to Dorset (one way)	1.0						1.0			3840
Social	Visiting family	2 times a year each - 2 adults, 2 children	16	8	250	Car, train	2x 250 miles to town Colchester (one way, 1 by train)	0.5				0.5		1.0			1000
	Visiting non-local friends	1 time a year each - 2 adults, 2 children	8	8	170	Car	Average based on: Brighton friends - 170 miles each way	1.0						1.0			1360

	Local friends	Twice a month each in pairs	96	67	8	ebike , Car	8 miles to most friends/town, many trips combined with after work or school	0.7			0.3			1.0			376	
	Local events	twice a month each solo	96	63	8	ebike , Car	8 miles to most friends/town	0.7			0.3			1.0			335	
Medical & other personal business		Once a month each - based on 11 months p/a	88	44	8	ebike , Car	8 miles to town	0.5			0.5			1.0			176	
Total			696	530	13858									0.0				
car trips								Trips per mode:						0			9214	
								530	0	30	113	14	0	687				car mile s
								Mode split:						77%				

**Travel
Assessment For
Bryn
Cynefin**

**Enterprise
Travel**

**Modal
split**

Reason for trips		Number of trips	Trips	car trips	Distance	Travel modes	Notes	FF Car	EV Car	Car share	E Bike	Public	Active	CHECK	
Deliveries - combined	Farm produce - eggs /salads/CSA box	Once a week 44 weeks a year, 88 trips	88	88	18	pick-up truck	before market, deliveries will be made to local CSAs, retail and hospitality within approximately 15 miles. Deliveries will be grouped together to deliver in bulk. 18 miles trip out then to market and then back home	1						1	1584
	Farm produce - Mushrooms , Probably combine with the journey above	Market /restaurants weekly 22 Saturdays june-oct / 2 times p/m nov-feb	60	30	18		deliveries will be made to retail and hospitality within approximately 20 miles. Deliveries will be grouped together to deliver in bulk. We intend to introduce ebike-trailer deliveries for customers within a 10mile radius	0.5			0.5			1	270
	CSA seasonal box	4 times per year	8	8	16	pick-up truck	Will be tied in with market day and delivered to CSA members within a 15 mile radius. Members further	1						1	128

							away will receive goods via post, or collect in person from market stall.									
	Deliveries - 42wks/per year	weekly veg box delivery, 84 trips a year	84	84	8.6	Car, van	from Hardwick - NP7 9AA	1							1.0	722
Receipt of goods	building materials and farm equipment Minimal additional goods will be needed	Once a month, 24 trips	24	24	16	Car, van	Orders will be arranged into bulk deliveries where possible	1							1	384
Receipt of goods	Special products from larger specilists supplier	once a year, 2 trips	2	2	16	Car, van	Orders will be arranged into bulk deliveries where possible	1							1	32
Purchasing of supplies	Minimal additional goods will be needed, combined with other domestic shopping if possible	Once a month	24	24	8	Car	These will be purchased from local provider where possible to reduce travel distance	1							1	192
Abattoir trips - combine	Sheep	1 time a year x two journeys one to drop one to collect	4	4	4	Car & trailer	The local small abattoir will be used to reduce lengthy journeys	1							1	16
Livestock	Including collecting new stock	4 times a year	8	8	15	Car & trailer		1							1	120
Total			302	272	3718										0	0
							Trips per mode:	272	0	0	30	0	0	302	3448	
							Mode split:	90 %	0%	0%	10%	0%	0%	100%		

Table 188 Enterprise travel projection Year 5

Travel Assessment For Bryn Cynefin

Visitor Travel

Modal split

Reason for trips		Number of trips	Trips	Distance	Travel modes	Notes	FF Car	EV Car	Car share	E Bike	Public	Active	Check
Friends & Family	Local friends	48 trips per year	48	10	car/walk	Some local friends live within walking or cycling distance. We are also located on the bus route from Abergavenny to Hereford	0.4		0.4			0.2	1
Friends & Family	Non-local friends	24 trips per year	24	65	Train, car share	Non-local friends can be collected from train or bus stops in a journey combined with another purpose	0.4		0.3		0.3		1
Friends & Family	Non-local family	16 trips per year	16	150	Train, car share	Non-local family are likely to stay for a number of days	0.6		0.2		0.2		1
Course participants	herbal foraging etc	4 courses a year with max of 14 participants in 8 cars	112	16	Active travel, public transport car	Car sharing and travel by public transport will be encouraged - offering reduced rate on tickets for people who come by bus - workshops will be scheduled to fit around the bus timetable.	0.5		0.2		0.2	0.1	1
Course participants	Green woodwork etc	4 courses a year with max of 6 participants each in 8 cars max	48	15	Active travel, public transport car	Car sharing and travel by public transport will be encouraged	0.5		0.2		0.2	0.1	1

Tour attendees	2 days a year	Cap at 30 people and 8 cars per day	120	16	Active travel, public transport car	Car sharing and travel by public transport will be encouraged. A maximum of 10 cars can be accommodated onsite. Tour attendees will need to reserve a space when getting their ticket.	0.6		0.2		0.1	0.1	1
Volunteers	Once a month across march-oct - 8 Saturdays per year	Capped at 14 people, 8 cars	224	8	Car share/bus & active travel	Regular volunteering from local community	0.5		0.3			0.2	1
community gathering	8 x per year	Cap at 16 people and 8 cars	256	8	Car share/bus & active travel	Regular volunteering from local community	0.5		0.3			0.2	1
Total		64 trips per year	848	12712									
Trips per mode:							430	0	230	0	54	134	800
Mode split:							51%	0%	27%	0%	6%	16%	100%

Table 19 travel assessment for visitors Year 5 +

Year 5 travel impacts continued

- 11.5.1 As the land-based business becomes more established, the requirement to undertake paid work offsite decreases. By 2030 we hope Lily will have reduced her clinic days to 1 day a week. Lily will also travel once a month with her work as a poet and facilitator. Bus and train will be taken wherever possible. There is also often the opportunity for lift shares with other local people traveling together for events.
- 11.5.2 100% of Pete's work is onsite and will continue to be so. With the exception of market and delivery days for the enterprise as outlined in the Table 18
- 11.5.3 Car travel for the family will involve stacking functions, by combining a trip to see family in town, for example, with the weekly shop. Friends will also be encouraged to liftshare or get the bus when they visit. We rarely take holidays, and when we do, it is via public transport, or by car within Wales and the SW.

Domestic Trip Numbers

- 11.5.4 The transport assessment above shows that total number of domestic trips per year to be 696 not including the school bus.
- 11.5.5 530 of these domestic trips are by car. 132 trips per person per annum.
- 11.5.6 The school bus will add a maximum of 760 bus trips per year (190daysx 2 x 2) when both children are attending school.
- 11.5.7 Family visits will be by bus and train as much as possible. This is easily accessible from our local bus stop. Especially the visits to Colchester, which is a longer journey, and only happens annually.

Domestic mileage

- 11.5.8 We will reduce our annual domestic mileage to 2304 miles per person per year, 3706 km/per person/per annum. Total annual domestic mileage for our vehicles of 9214 miles (14826 km).

Enterprise Trip Numbers

- 11.5.9 The transport assessment above shows that the total number of trips per year associated with the enterprise is projected to be 302. This is at worst case, assuming trips are not combined.

Enterprise mileage

- 11.5.10 The total mileage associated with the enterprise is projected to be 3718, 3448 by diesel pickup or car and the rest by e bike and trailer.
- 11.5.11 Even considering our domestic and land based business mileage taken together we will reduce our car/van travel by to 3165 miles/per person/per annum, 5094 km/per person/per annum. Total annual mileage for our two vehicles of 12663 miles (20,374 km).
- 11.5.12 We will seek to find ways to reduce these impacts further
- 11.5.13 Reductions in transport impacts will come from:
- Reduced commuting to work
 - Riding by bike 50% of journeys to work and social/personal trips within 10 miles
 - Walking and /or taking the bus for other local journeys
 - Substituting local car journeys with ebike journeys.
 - Using the smaller more efficient car for enterprise journeys where appropriate
 - Stacking functions on journeys - eg. shopping trip combined with social visits
 - Stacking functions on journeys - Combining business and domestic journeys where possible.
 - Reduced need for/frequency of shopping trips due to production on the land and buying in bulk.
 - Taking the bus whenever possible for trips into towns and cities close by.

- Encouraging car-sharing or public transport from guests
- Scheduling workshops and events around the bus timetable
- Replacing the existing vehicles with less polluting options when they require replacement

Active Travel

- 11.5.14 We will practice active travel by substituting with ebikes for local trips where possible, both for domestic and business travel. We aim to have a ebike trailer for deliveries within 10 miles weather permitting.
- 11.5.15 Both adults have an electric and a pedal-powered bike that can be used to access Abergavenny for personal business, shopping and social visits. There is also the potential to go by bike to Abergavenny Train station for onward train travel. Lily will be able to cycle to work on her ebike 50% -60% of journeys. Other times, when driving, the trips will be combined with other functions, such as a visit to the post office.
- 11.5.16 'Active travel means walking and cycling for everyday journeys. This includes journeys to school, to work, to the shops or to access services. Active travel does not include walking and cycling for recreational or social reasons.'

Enterprise Activities and Transport Impacts

- 11.5.17 100% of our enterprises operate within a 20 mile radius. We have consciously chosen a low frequency CSA scheme, choosing our regular distribution to be through local weekly market and wholesale suppliers. Non-perishable items purchased from our multiple enterprises by people beyond the CSA 10 mile radius can be collected from us on market day or will be delivered via Royal Mail through the local post office.
- 11.5.18 We have selected restaurants, wholesalers and outlets within 20 miles of the site, minimising the number of miles travelled. Trips can be combined, e.g. Deliveries will be grouped together to deliver in bulk and combined with Market days. Over the next 5 years, we intend to introduce ebike-trailer deliveries for customers within a 10-mile radius.

Reducing the Impacts of Guests and Visitors

- 11.5.19 We will encourage visitors to the land to utilise public transport whenever possible.
- 11.5.20 To promote low carbon forms of transport, we will encourage both friends, family and other visitors to use public transport or lift share to the site, where feasible. This will be done by making clear on any advertising that reducing high carbon forms of transport is integral to our project, and that attendees/volunteers who choose this option will be given ticket priority over those who do not. (unless they are limited by accessibility needs).
- 11.5.21 We may also consider adjusting the ticket cost to allow for the £3 bus fee eg. - people who travel by car pay £3 more per ticket . All events will be ticketed, to manage numbers and transport. There will be 8 parking passes available, after which, people will have to either car share or take the bus.
- 11.5.22 We will structure open days, volunteer and learning days around the bus time table, so that people can easily travel to and from the events by bus from anywhere on the 23 bus route, between Hereford and Newport.
- 11.5.23 Because site access is on a busy trunk road, friends are also often passing by, so we encourage them to tie in visits with other essential trips.

Course participants	herbal foraging / mushroom inoculation / herb propagation etc	4 courses a year with max of 14 participants in 8 cars
Course participants	Green woodwork / sustainable design etc	4 courses a year with max of 6 participants each in 8 cars max
open day attendees	2 days a year	Cap at 30 people and 8 cars per day
Volunteers	Once a month across March-Oct - 8 Saturdays per year	Capped at 14 people, 8 cars
community gathering	8 x per year	Cap at 16 people and 8 cars

11.6. Travel Plan

- 11.6.1 A travel plan is a long-term management strategy for a development, site or organisation that seeks to deliver sustainable transport objectives. The travel plan seeks to mitigate the effect of traffic movements resulting from the proposed development by presenting a package of measures that reflect the need to reduce travel-related emissions whilst acknowledging the transport impact of the proposed development.
- 11.6.2 Travel plans can assist in mitigating the effects of traffic movements resulting from a proposed development at a time when people moving home or moving to a new area, are more open to behavioural change. This will then allow an action plan to implement those measures and monitor their success.
- 11.6.3 Physical activity has been shown to contribute to mental and physical wellbeing. The promotion of active travel (walking and cycling) as part of a travel plan enables people to enjoy these health benefits as part of their daily routine.
- 11.6.4 The main reasons for implementing a Travel Plan are:
- To provide a framework for the actions and incentives that will make the adoption of the Plan possible;
 - To contribute to Social Responsibility, the applicants accepts that they should do everything they can to protect the environment and encourage their visitors to do the same;
 - To understand and reduce the carbon footprint arising from travel to and from the site; and,
 - To improve facilities available on-site, which encourage and enable more sustainable travel.
- 11.6.5 The primary focus of this travel plan is the travel undertaken by residents of the development, but also includes measures to encourage sustainable travel by visitors to the development.
- 11.6.6 The overall objectives of the Travel Plan are as follows:
- Health & Social Benefits – A reduction in car travel will benefit health through reduced air pollution and harmful emissions, road traffic accident prevention and through the promotion of healthier activities such as walking and cycling. In addition, a percentage of households have no regular access to private vehicles and therefore the use of public transport, cycling and walking can play a significant role in improving accessibility and reducing social exclusion.
 - Climate Change – The burning of fossil fuels is altering the climate, with carbon dioxide emissions being the most common contributor. Climate change represents one of our biggest environmental challenges with transport accounting for approximately 22% of man-made greenhouse gas emissions. The implementation of Travel Plans can reduce the adverse impact on climate change.
- 11.6.7 Section 11 of this Management Plan is considered to represent a combined Transport Assessment and Travel Plan for the purposes of the OPD submission.

11.7. Monitoring

- 11.7.1 There will be detailed recording of all trips to and from the site in terms of purposes, distances, modes, and any transport sharing. The record of all trips will be included in the annual OPD monitoring report.
- 11.7.2 We will also record the suppliers of goods and services to ensure that local suppliers are favoured over those from a greater distance.
- 11.7.3 The contributory criteria for OPD are that:
- The use of low and zero carbon modes of transport should be maximised.
 - On site vehicle numbers should be controlled and vehicle pools used for One Planet Developments of more than one household.
 - Connections between the site and local suppliers and customers for goods and services requiring travel, should be maximised opposed to those at a greater distance.
 - Visitor travel should be the subject of proactive management to reduce transport

12. Ecological Footprint Analysis

- 12.1.1 We have used a checked and updated version of the Ecological Footprinting Tool provided to us by Geo to assess our current ecological footprint. We have also considered how implementing our OPD project will enable us to reduce our impacts.
- 12.1.2 The results are shown in full in Appendix J of this MP as follows:
- Our current EFA living on site in temporary accommodation is 2.66 gha.
 - Our estimated ecological footprint at first habitation of our OPD is 1.97 gha.
 - Our estimated ecological footprint at year five of our OPD is 1.38 gha.
- 12.1.3 We will reduce our impacts due to the following actions:
- Reducing the amount of meat in our diet to only meat from animals reared here onsite
 - Meeting at least 60 % of our food needs from the land, and reducing the need to buy food
 - Ensuring that approximately 85% or more of our work is generated onsite
 - Continuing to produce our own energy from sun and wind
 - Reducing our domestic mileage travelled in fossil fuel vehicle to 2304 miles per person per year
 - Using ebikes and public transport wherever possible
 - Building and inhabiting our own low-impact dwelling, rather than buying/renting
 - Buying only second hand or recyclable items whenever possible
 - Reducing time away on 'Holiday', we will not be able to easily go away for long periods, due to the need to be on site to care for livestock and tend to plants
 - Choosing to live a lifestyle where our needs are met by the land around us and not by high impact products brought in from elsewhere.
 - If we travel internationally, going by train boat or bus wherever possible
- 12.1.4 We will regularly record the information needed to calculate our future ecological footprint from first occupation of the site and provide this information within our monitoring reports.
- 12.1.5 We recognise that our business activities will also incur impacts beyond the scope of those captured by the domestic EFA. We have considered how we can reduce these by actions such as the careful choice of feeds for the animals, organising our travel so we combine journeys using reclaimed and recycled materials which minimise the need for new materials and infrastructure to run the business. Guests and visitors to the site will be encouraged to reduce their travel impacts as much as possible.
- 12.1.6 We hope our products will have a lower footprints due to our production systems.

13. Phasing, Monitoring & Exit Strategy

13.1. Phasing & Implementation

13.1.1 We aim that the OPD will be fully established by year 5 and that all of the essential criteria for OPD will be achieved by this time.

13.1.2 The programme for the implementation of our proposals is laid out below:

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
monitoring	OPD application	Monitoring annually in February	Monitoring annually in February	Monitoring annually in February	Monitoring annually in February	Monitoring annually in February
Wood products	Timber felling	Timber milling	Wood products business commences			
mushrooms	Mushroom logs inoculated	Mushroom business commences trading	Annual log replenish mushroom inoculation	Annual log replenish mushroom inoculation	Annual log replenish mushroom inoculation	Annual log replenish mushroom inoculation
Domestic infrastructure	*management and occupation of the site commences *Household begins to live onsite in temporary accommodation (off-grid cabin - already onsite)	*Building programme for house commences *Use polytunnel as temporary growing space for domestic food	*Domestic dwelling complete *Planting of domestic forest garden and domestic garden			
land management	*Orchard planted *Hedgerow planted *shelter belt planted *Coppice planted *SUDS groundworks	Swale and pond creation Planting of swales				Orchard comes into production
Farm infrastructure	*Polytunnel constructed and covered *Fencing and gates *Orchard tree guards		Green woodwork area and biodome			

	*Workshop and lower barn complete		Constructed			
business		*CSA business commences * establish legal structure *Mobile shop trailer construction begins * Eggs business commences	Mobile Trailer shop complete, begins trading			
livestock	Sheep onsite	Chickens and ducks onsite	Cows onsite			

Table 20 Phasing and implementation

13.2. Monitoring

- 13.2.1 Appendix K of this MP is the monitoring template we propose to use. It details the information we will record which will be in addition to all the information that is necessary to complete the ecological footprint spreadsheet.
- 13.2.2 We will submit annual monitoring reports according to the OPD Practice Guidance. An EFA will be submitted to cover Years 3 and 5, along with a management plan in Year 5 reviewed for the following five years.

13.3. Exit Strategy

- 13.3.1 See paragraph 5.11 to 5.17 of the OPD Guidance document.
- 13.3.2 The OPD Guidance document defines project failure as 'a failure to achieve one or more of the essential characteristics of One Planet Development in the open countryside over a period of two years (after year 5) without instituting clear and effective measures to address the identified problems.'
- 13.3.3 It is our intention that the OPD development will succeed and demonstrate that it has attained the criteria laid out within the policy and guidance such that it will continue to be an active OPD
- 13.3.4 The buildings which will be on the land are identified in figure 6 below.



Figure 6 Identifying buildings on the land

- 13.3.5 The Guidance suggests communication over emerging problems and critical failures. The Guidance suggests that if the LPA consider that we are not delivering against essential criteria as laid out in the Management Plan a yellow/red card approach can be utilised where they highlight any concern to us and we address it. If we fail to address it in a reasonable period of time a 'red card' could be issued. We accept that a critical failure would be defined as if we get two consecutive red cards for any essential criteria that have been flagged to us and we have not addressed fully within the two years. In that instance we would either need to ensure everything was addressed satisfactorily or start to implement the exit strategy.
- 13.3.6 The following exit strategy sets out measures which will be undertaken in the event that the One Planet Development fails, and if the reasons for its failure cannot be overcome. It lays out how the development and associated built land use changes would be treated with a priority for re-use. Such that the use of the site is restored to its previous agricultural use and improved condition (or another use agreed with the Local Planning Authority).
- 13.3.7 The details of the strategy for each building/item are laid out in Table 16 below.

Ref	Item/Building	Use during OPD	Retained or Removed	Use post OPDS	Actions Required	Post OPD Condition	By When
1	Access tracks and hardstanding	Agricultural - access	Retained	Agricultural	None	As is	N/A
2	Existing Workshop/storage room	OPD - workshop, machinery, tools, produce store	Retained	Agricultural	None	As is	N/A
3	Compost toilet	OPD	Retained	Agricultural	None	As is	N/A
4	Container	OPD - machinery, tools, produce store	Retained	Agricultural machinery, tools, produce store	None	As is	N/A
5	Polytunnel	OPD - crop production	Retained	Agricultural - sheltered cropping	None	As is	N/A
6	Timber frame Barn	OPD - machinery, tools, processing, produce, feed store	Retained	Agricultural machinery, tools, processing, produce, feed store	None	As is	N/A
7	Wheelchair accessible Timber walkway	OPD - access to outdoor woodworking/craft area	Retained	Forestry Permitted Development access	None	As is	N/A
8	Green woodworking structure	OPD - workshop, tool storage, manufacturing, education	Retained	Forestry Permitted Development workshop, tool storage, manufacturing, education	None	None	N/A
9	Compost Toilet	OPD - structure	Retained	Forestry Permitted Development structure	None	None	N/A

10	Geodome	OPD - workshop/ teaching space	Retained	Forestry Permitted Development temporary seasonal accommodation for forestry worker(s)	None	None	N/A
11	Animal Shelters	OPD - animal shelter machinery, feed store	Retained	Agricultural animal shelter machinery, feed store	None	As is	N/A
13	Ancillary Guest Cabin	OPD - ancillary guest accommodation	Remove	N/A	Cabin to be advertised for sale and removed. Screw piles will be removed. The component parts, fixtures and fittings will be removed from the site.	The ground under the cabin will be reinstated as grassland to match the surrounding sward. This should be easily achieved as most of the structure is raised above the ground and the topsoil still exists beneath it. Where this is not the case previously excavated topsoil will be used to infill previous earthworks	within twelve months
14	Domestic Greenhouse	OPD - domestic vegetable production	Removed	N/A	Greenhouse will be removed from site and sold or reused	As is	within twelve months

15	OPD House	OPD - dwelling	Remove	N/A	Structure to be advertised for sale and removed. Screw piles will be removed. The component parts, fixtures and fittings will be removed from the site.	The ground under the cabin will be reinstated as grassland to match the surrounding sward. This should be easily achieved as most of the structure is raised above the ground and the topsoil still exists beneath it. Where this is not the case previously excavated topsoil will be used to infill previous earthworks	within twelve months
15	Decking	OPD - access to OPD dwelling	Remove	N/A	Dismantle and remove	As Above	within twelve months
	woodstore	OPD - dwelling wood store	Remove	N/A	Dismantle and remove	As Above	within twelve months
16	Reedbed System	OPD - grey water treatment	retain	Habitat	Reedbed and ponds to be retained for wildlife habitat	N/A	N/A

Table 20 Exit strategy summary

Appendix A Draft Unilateral-Undertaking
Appendix B Preliminary Ecological Assessment
Appendix C LVIA and Landmap Information
Appendix D Baseline Photographs of the Land.
Appendix E Land based business plan
Appendix F Zero Carbon Energy Report
Appendix G Renewable Energy Calcs
Appendix H SuDs and Drainage Information
Appendix I CfSH Materials Assessment
Appendix J Ecological Footprint Assessment
Appendix K Annual Monitoring Form